Gleanings in Bee Culture

Established 1873

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July, 1940

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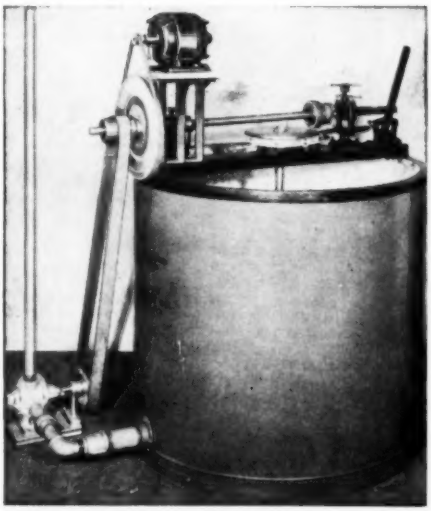

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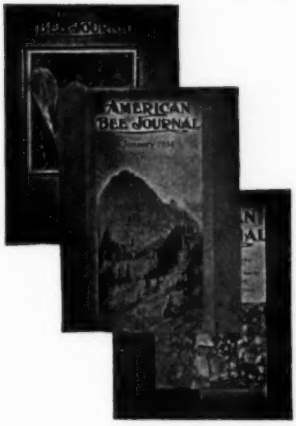

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The Monthly Honey Market

U. S. GOVERNMENT REPORT

Information from Producing Areas (last half of May).

California Points: Southern California.—Temperatures have averaged below normal, with considerable early morning and night fogs. This has reduced the former Sage flow of 3 to 4 pounds a day to 2 pounds, but colonies which were not moved to orange districts have made a fairly good crop of Sage honey, White to Water White in color and of good flavor. A profusion of blooms of various sorts is reported in the foothills, which is so stimulating to the colonies that hives are filling up rapidly with a field force of young bees which will be available for gathering the late Buckwheat flow. On the desert a yield of 20 pounds has been gathered from morning glory, bluebrush, bitter brush, yellow top, and other sources. In the Palo Verde Valley mesquite is through blooming, and arrow weed is now yielding well. Considerable extracting has already been done. Demand for honey has been rather slow, with Eastern demand exceptionally light. Buyers are making inquiries about Orange and Sage honeys, but little has been sold. The market has been generally steady, but beekeepers have been either reluctant to sell or too busy with their bees to be interested in marketing the honey that has already been taken off. Sales by beekeepers in ton lots or more at Southern California delivery points, per lb.—Orange, Water White 5-5½c. Extra White 4¾-5¼c; White 4½-4¾c; Sage, Extra White to Water White 4¾-5½c; White 4½-4¾c; Mixed Flowers, Extra Light Amber 3⅔c. The beeswax market has been generally steady at mostly 17-20c per lb., few lots light capping wax high as 21c per lb. delivered Los Angeles.

Imperial Valley.—The weather has been warm and some Alfalfa honey is being already gathered. Lack of water for irrigation as the result of the recent earthquake is curtailing prospects. Many colonies are not as strong as they should be at this season of the year, but are beginning to build up. Melons, arrow-weed and sweet clover are also being visited by the bees. Grasshoppers are now becoming serious, but they will be poisoned after the early cutting of alfalfa. Few sales reported old crop Light Amber to Extra Light Amber Alfalfa $4.00-4.25 per case of 120 pounds.

Central California.—Temperatures averaged somewhat below normal during this period, especially in the interior valleys. Morning fogs were general along the coast. The Sage flow along the coast is over, with an average crop of high grade, and the wild buckwheat is starting to bloom. In the San Joaquin Valley spikeweed is yielding freely. Prospects are for a good flow from wild buckwheat. Bear clover and yerba santa are yielding in the mountains. Some sage and spikeweed honeys are now being extracted. Swarming was heavy and consequently many colonies are sub-normal in condition, though most of them are probably up to normal. The market has been rather quiet, with buyers holding off until the size of the crop can be determined more adequately. Trading in Sage honey was moderately active, but producers of Orange honey are reluctant to sell. Sales by beekeepers in ton lots or more, per lb., delivered Bay Cities: Extra White to Water White Sage mostly 5½c; Orange, Extra White to Water White 5-5⅓c; Light Amber Mixed Wild Flowers 3½c; Light Amber Fruit Bloom 3½c; No. 1 White Orange comb $3.25 per case. Delivered Interior Points—Orange, Extra White to Water White mostly 5c, some 4¾c, and some 6c; Light Amber Mixed Flowers 3¼c; Sage, mostly White to Water White 5c per lb. Sales at country points—White Sage 5c, without cases. Delivered Los Angeles—Extra White Orange 4¾c per lb.

Northern California.—Temperatures have been moderate for this season of the year, with clear weather general except for morning fogs along the coast. Bees are generally in good shape, with abundant pollen stores and ample honey for daily needs. Valley plants are in fair condition and in the high mountains bees are gathering honey actively from mountain misery, buckbrush, deerbrush, poison oak, and various wild flowers. Yellow star thistle is also yielding. The outlook is for a good crop of Thistle honey. A moderate volume of honey moved during the last half of May, with prices generally steady to slightly lower as compared with those of two weeks earlier. Sales by beekeepers in ton lots or more, per lb., delivered Bay Cities—Extra Light Amber Thistle mostly 5c, some 5¼c; Light Amber Manzanita 3½c; Mixed Wild Flowers, Light Amber 3½c. Delivered Interior Valley Points—Light Amber Manzanita 3½c; Extra Light Amber Alfalfa 3½c; Light Amber Mixed Flowers 3-3½c; Amber Mixed Flowers 2 5/6c; Dark, 2½c.

The market for beeswax has been dull, with no buying reported by local dealers. Prices are nominally unchanged, with good yellow wax quoted at 18-20c per lb. delivered Bay Cities.

Pacific Northwest: West of Cascades.—Temperatures have been generally above normal. Some windy and cloudy weather is reported along the coast, but only scattered precipitation until the end of the period. In the Willamette Valley clover, vetch, alfalfa, berries, pea vine, dandelion, lupine and other flowers are yielding, and as colonies built up rapidly just before the vetch flow a heavy crop is in prospect. Extracting will soon commence with the yield expected to average fully 100 pounds to the colony. In the fireweed area the weather has frequently been too wet for bees to take advantage of the flow from soft maple, vine maple and other sources, but bees are generally in good condition, as are honey plants, and fireweed prospects appear good except in areas burnt over last year. An average of 50 pounds surplus from vine maple is reported from Western Washington. In the lower altitudes along the coast broom is still blooming; and in Southern Oregon manzanita and chaparral are still producing. Poison oak, chittam, French pinks, and buckbrush are yielding in northeastern Oregon. Raspberries and blackberries and lupine, Scotch broom, white Dutch clover are furnishing nectar also in Western Washington, with prospects encouraging for a flow from these sources.

SUMMARY—West of the Rockies recent temperatures have been above normal, and it has been generally dry, permitting bees to fly freely. Prospects are encouraging for a fairly good flow where sufficient nectar-bearing plants remain. Over a large area from the Rockies to the Apalachians, and along the eastern coast, temperatures have been below normal, and substantial rains have fallen in the east-

ern and southern portions of this area. Bees have been confined to the hives to a considerable extent and colony development has been interfered with. However, the prospective yield from nectar-bearing plants has been greatly improved by the additional rainfall. More package bees have been shipped from the South to the northern Clover Belt than had been anticipated. Though many orders were late beekeepers were apparently glad to receive the young bees. Where colonies built up rapidly in the North many were divided to make up for the heavy winter losses. It is not considered likely, however, that all losses will be made up in the Clover Belt. The fact that Spring is later than normal will prove helpful to commercial beekeepers who are endeavoring to build up their colonies to working strength. Many are feeding where fruit bloom yielded only lightly. The past two weeks have improved prospects for the coming crop, both by reason of the increased plant development and lower nectar flow which should result from the recent precipitation, but also because of the rapid development of colonies in many commercial yards. Southern package bee-men are still receiving orders because of the lateness of the season in the North.

Much new crop honey has already been extracted and sold in Georgia, Louisiana, and other Southern States, with demand reported unusually good and the crop so far one of the best in years in that area. The recent lack of rainfall, however, may curtail the later nectar flow in the South. Light crops of honey in Texas are proving insufficient to take care of the demand within the State. The early crop in the Pacific Northwest has been reported fairly heavy, and an average crop of high grade Sage honey has been gathered in California. Market prices show little change. Additional lots of old crop honey continue to crop up from time to time, but it is generally agreed that the carry-over into the main 1940 crop will be light.

Monthly Report of Honey Producers

Early in June we sent the following questions to honey producers: 1. At what price has honey been sold or contracted for, if any, in large lots (carload lots or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, Fancy and No. 1, per case? 2. What are prices when sold to grocers in case lots of (a) extracted honey in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) comb honey, Fancy and No. 1, per case? 3. What is the retail price to consumers in your locality of (a) extracted honey in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) comb honey, Fancy and No. 1, per section? 4. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 5. How does the number of colonies that are in condition to store surplus honey this season compare with the number of such colonies last year? Give answer in per cent. 6. What is the condition of the honey plants at this time in your locality as compared with the average? Give answer in per cent. 7. What is the per cent of winter and spring loss of colonies (if any) in your locality? Give answer in per cent. 8. What is the present condition of the colonies in your locality as compared with normal? Give answer in per cent.

		1.		2.		3.		4.	5.	6.	7.	8.
June				To		To con-			Colo.	Cond.	Pct.	Cond.
date		Large lots.		Grocers.		sumers.		Move-	compar-	of	of	of
rec'd.	State. Name.	Ex.	Comb.	Ex.	Cb.	Ex.	Comb.	ment.	ison.	plants.	loss.	colo.
14	B. C. (A. W. Finlay)	.09		.65		.85		Fair	110	100	12	120
14	S-Calif. (L. L. Andrews)					.53	.23	Fair	90	60	10	100
14	C-Calif. (Davis Bros.)							Slow	100	125	2	100
12	SE-Colo. (Otis E. Adcock)			.40		.49		Slow	100	100	3	100
14	S-Fla. (C. C. Cook)	.04		.35		.50		Slow	110	100	10	100
17	C-Fla. (Harry Hewitt)			.50		.65		Slow	100	100	0	100
13	SE-Ga. (J. J. Wilder)	.06		.48		.55		Fair	90	100	15	100
13	NC-Ills. (A. L. Kildow)					.50		Slow	85	90	20	95
10	S-Ills. (Carl E. Killion)	.05½		.45		.57	.20	Rapid	65	100	35	75
10	NC-Ind. (T. C. Johnson)			.50	3.00	.65	.18	Slow	90	75	25	90
10	NW-Ind. (E. S. Miller)			.50	3.00	.65	.15	Slow	85	80	15	90
12	W-Iowa (E. G. Brown)	.04½				.49		Fair	100	100	20	100
11	C-Md. (S. G. Crocker)			.60	3.60	.75	.25	Slow	90	100	40	80
12	C-Mich. (E. D. Townsend)	.05½						Slow	90	90	12	90
13	E-Minn. (Francis Jager)						.20	Fair	75	100	25	60
12	E-Minn. (Floyd W. Ray)	.04½		.35		.45		Slow	100	100	6	90
14	C-Nebr. (J. H. Wagner)	.05			3.60	.35	.17	Slow	60	90	6	90
17	W.Nev. (Mrs. E. G. Norton)							Slow	100		2	80
13	W-Nev. (Geo. G. Schweis)					.45	.15		100	65		125
13	W-N. M. (C. A. Baltzley)	.06	3.20	.43	3.60	.55	.20	Slow	90	75	10	90
11	NW-N. Y. (Geo. B. Howe)			.50			.20	Fair	80	90	10	90
10	C-N. Y. (F. W. Lesser)	.07						Fair	90	80	20	90
10	SE-N. C. (W. J. Martin)	.06		.55		.75	.20	Fair		100	10	100
13	C-Ohio (R. D. Hiatt)							Slow	70	90	25	70
10	NC-Okla. (C. F. Stiles)			.45		.65		Fair	85	95	20	
17	W-Ore. (H. A. Scullen)			.38		.45		Slow	100	110		100
10	SE-Pa. (D. C. Gilham)			.70	4.25	1.00	.25	Slow	80	100	28	95
12	W-S. C. (E. S. Prevost)					.15		Fair	98	100	1	91
14	SE-S. D. (J. F. Norgren)			.40		.49	.15	Fair	90	85	20	85
10	C-Tenn. (J. M. Buchanan)					.75		Slow	75	75		90
12	E-Tenn. (W. L. Walling)					1.00		Slow	95	100	3	95
12	C-Texas (T. A. Bowden)			.45		.55		Fair	100	100	3	100
11	S-Texas (J. N. Mayes)			.20		.28		Slow	50		10	40
13	S-Texas (H. B. Parks)			.45		.55		Fair	90	35	2	50
14	N-Utah (W. H. Hendricks)					.45		Fair	60	100	10	100
12	W-Vt. (Phillip Crane)				3.38				75	100	28	75
11	SE-Wisc. (N. E. France)					.45			.75		35	

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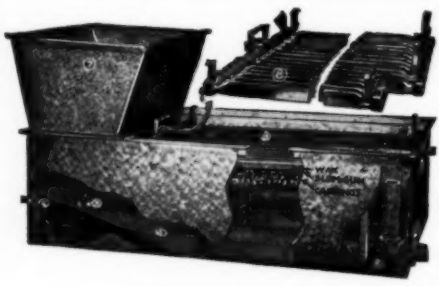

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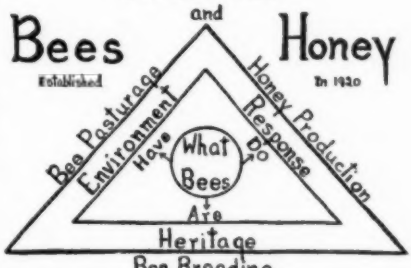

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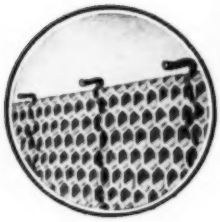

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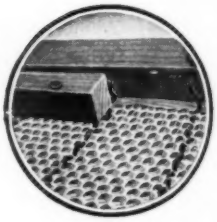
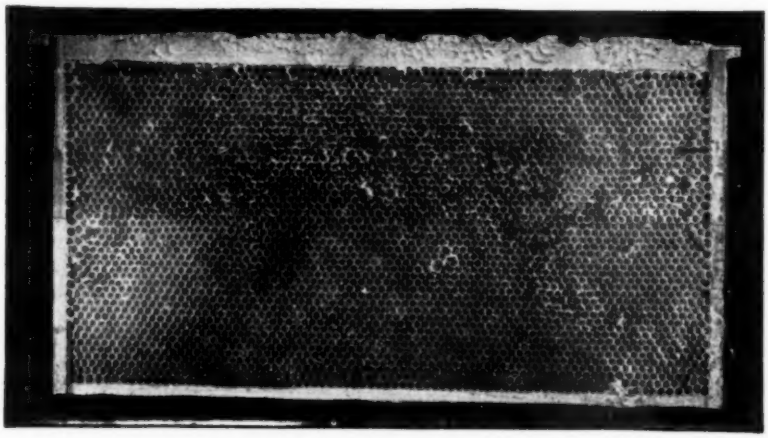
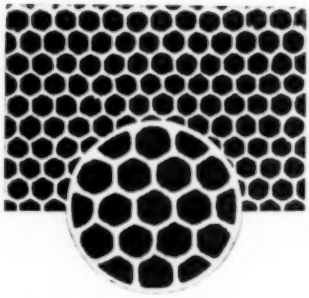




That Do So Much



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Vol. 68
No. 7

Gleanings
in Bee Culture

July
1940

Marketing Principles

By Percy H. Wright

The extraordinarily slow and tardy recovery of the 1939 honey market, after the debacle that preceded it, was a lesson to us all. Such lows should never be allowed.

A decline of prices below cost of production is believed by some economists to be a purgation and a promise of near-by recovery, if not a necessary step in the preparation for such recovery. To believe this seems to the ordinary observer heartless and unreasoning. It is, rather, an unmitigated calamity. Its worst effect, perhaps, is that it gives all alike, producer, middleman, and consumer, the idea that the price which has become familiar is the just and normal one.

Ideas make prices, not the real conditions that underlie them. This is proved by the fact that after the short crop of 1939 was harvested, the distress values at which much 1938 honey had sold continued. The lag was caused by the time it takes to change men's ideas.

Honey is only one agricultural commodity, and its marketing problems are best studied as a part of those of agriculture as a whole. Of staple foods the human body can consume only so much, and hence the "inelastic demand". A class of goods with inelastic demand is one in which a decline in prices may cause a very small rise in consumption. A good part of the troubles of the primary producers is brought about by their tendency to apply in their selling those principles which they believe to be laws of trade, from their understanding of the motives which influence them in buying. I for one do not believe that it is either necessary, or for the good of society, or of any class of it, that the primary producer should be forced to exchange his very vital goods for less than a living for himself.

Suppose, in a given community, 100,000 pounds of honey are sold annually, at a price of ten cents. Then comes a year in which the crop is short, and there are only 50,000 pounds to be sold. The price will move up, but not in correspondence with the drop in production. The average price, say, is fifteen cents, and the crop nets $7,500. This is an instance of loss of revenue through inability or disinclination of the public to follow the justified price advance.

Now comes a third year, and the crop is 200,000 pounds. The price drops in proportion, and more. The reason is clear, for after the public is satiated, a very great decline is required to make it believe it desires a further supply. The price, say, falls to three cents, and the year nets $6,000. If the beemen's seasonal production charges are $7,000, the year of scarcity has given them a profit of $500, the "normal" year a profit of $3000, and the year of plenty a loss of $1,000.

These figures make a curve, and every commodity has its own. They are all more or less characteristic, but naturally fluctuate with changing tastes and the state of prosperity as a whole.

In the chart, the area of the rectangles enclosed by the price line and the volume line indicates the total revenue received by the producers.

It is still more illuminating to show both total revenue and price on straight dimensions.

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The shaded portion indicates the cost of production. Actually this will vary somewhat with the harvest, but it is clear that only when the curve goes above it is there any profit to the producer.

Obviously, if an industry were controlled by a single mind, he would give continual study to the problem of finding the highest point of the curve for the given year. As nature plays an unpredictable part in final yields, he would many times guess very wide of the mark. But even though his attempts to adjust production to demand must inevitably fail to some degree, there are several adjustments that remain to him.

(1) Lower the cost of production by adopting cheaper or more efficient methods of management.

(2) Increase the desire for goods by suitable publicity. (Presumably effective demand could also be increased by raising the general level of prosperity).

(3) Withhold a portion of his goods from the market in years of abundance to prevent decline in prices, and gradually feed it out to the market in years of scarcity to prevent decline in consumption. "Joseph" in Egypt had the secret some two hundred generations ago.

However, to apply this solution is "easier said than done". No democratic government, responsive to public feeling, can ever do it. "Joseph" is pictured as an irresponsible dictator, and had the benefit of a perfect foreknowledge of the future for his guidance. Nevertheless, a few leaders of industry are applying the principle with judgment and a fair measure of success.

Method One is the perennial aim of the bee journals, and of all scientific study of beekeeping, and of private experiments. Keep abreast by subscribing to a bee magazine and by analyzing all experience that comes within your ken.

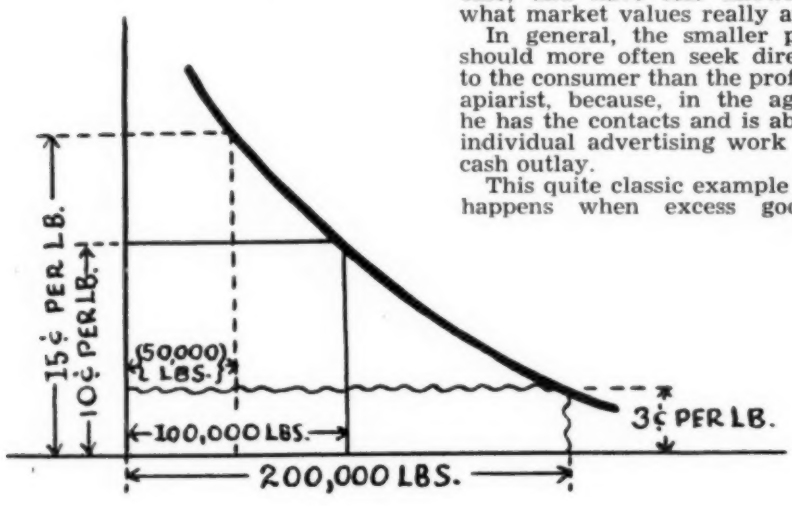
Method Two is the continued effort of the honey cooperatives and the bee associations. They cannot function without your support.

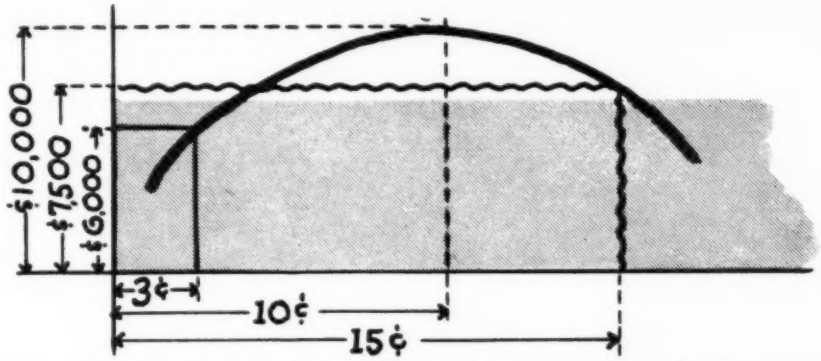
Method Three need not result in the accumulation of market-breaking surpluses, as is the case of cotton and other assisted commodities. The reason for such surpluses is evident; it is that the producers have the money in their hands instead of the goods, and the fact that the money comes from government funds instead of from the public spending purse evidently makes no difference in their plans for expansion. It is desirable that they should have enough income from other sources to maintain a healthful standard of living, but not enough to stimulate unrestricted production. The small producers, because they have other sources of income, should be able to refrain from breaking the market by sacrifice offerings more easily than the large producers.

In actuality, the reverse is the case. With less stake in the prosperity of the beekeeping industry as a whole, they are less loathe to sacrifice it for a temporary gain. Also they become panicky with greater ease, and have less knowledge of what market values really are.

In general, the smaller producer should more often seek direct sales to the consumer than the professional apiarist, because, in the aggregate, he has the contacts and is able to do individual advertising work without cash outlay.

This quite classic example of what happens when excess goods are





thrown on a declining market is of value chiefly in persuading those who annually dump their goods under the influence of fear, to see that there is no necessity for such action. The irony of the situation is that the public could, and in other countries with better publicity for honey, does absorb twice the present quantity. But the dealers in honey are relatively few in number, and it is they who behave according to the rules as buyers,—and we sellers.

Moose Range, Sask., Canada.

President and Secretary

Mrs. T. W. Burleson, Waxahachie, Texas, President of the National Ladies' Auxiliary.

Mrs. E. H. Bremer, San Antonio, Texas, Secretary-Treasurer of the National Ladies' Auxiliary.

Every woman who is interested in beekeeping or in the use of honey as a food should join the National Ladies' Auxiliary of the American Honey Industry. This year a contest is being held with two prizes for membership. One is to the region having most members December 1, 1940, the country being divided into six regions. This prize will be fifty dollars. If your State Auxiliary does not meet before December 1, 1940, or there is none in your State, send your twenty-five cent dues to the National Secretary-Treasurer, Mrs. E. H. Bremer, Route 1, Box 368, San Antonio, Texas.

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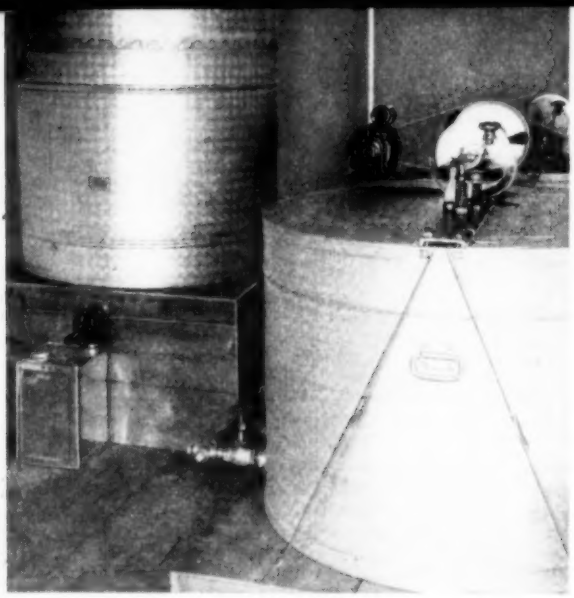


Honey extractor at right with motor mounted on rim. Also honey tank placed conveniently for receiving the honey.

Old, but Good, Extracting Plans

By H. H. Root

On one occasion I remember seeing a honey extractor wired to a wall with many strands of baling wire twisted tightly with a flat stick. On the end of the cross-bar of the extractor that projected out into the room, a post was tightly wedged between the top of the extractor and the ceiling. I did not see the extractor running but I guessed that the whole building shook when it was in operation.

The other day, a beekeeper was telling me that he rarely had to anchor his extractor to the floor; that floor hooks and braces were only in the way and unnecessary.

Why the difference? Why did one extractor shake the building while the other one ran in perfect balance? It is in the difference in the way the extractors are loaded. Perhaps the first extractor had been left to untrained operators, while the second was cared for by those who knew that efficient extracting can be done only when the extractor is intelligently loaded.

Hints on Loading

An empty honey extractor should stand full speed on a level floor without anchoring. The performance can be duplicated if the load is well balanced. It takes more time to load an extractor in balance but, on the other hand, more honey can be extracted per day in a balanced extractor than in an unbalanced one; therefore, one should consider not the number of minutes it takes to load the extractor, but the amount of honey that can be extracted per day.

If half the combs in an extractor are old combs that have been used in a brood chamber, even though they average about the same in weight as new combs when both are filled with honey, the extractor will get badly out of balance after the honey leaves the comb. Why? Because combs, heavy with cocoons, weigh more than new combs, and though the full combs of honey may weigh almost the same, the empty combs vary so much in weight that the extractor is likely to be thrown badly out of balance and shake the floor or room. This sort of a condition is particularly trying because in many extractors, the last of the honey does not leave the combs until after full speed is reached.

Very much the same is true of combs containing pollen or of combs that contain granulated honey. The pollen may be covered up with honey and even sealed over, but after uncapping, it is plainly visible. Such combs should be set to one side until there is enough for a load and then care should be taken to see that combs, approximately the same weight or with the same amount of pollen, are placed opposite each other in the extractor. Frequently it pays to lower the maximum speed of combs containing pollen because of the difficulty in balancing.

If there are but few such combs, they may be set aside, half of them

placed on one side of the extractor and half of them on the other—the rest of the space filled up with combs that do not contain pollen at all.

These instructions apply also to combs in which the honey is partially granulated, although unless some of the cells are almost solid, granulation does not prevent the problem that pollen does, for honey, only partially granulated, will leave the cells.

Shallow combs should always be placed opposite each other. Obviously, an extractor with one-fourth or half the space filled with shallow combs, will become very badly out of balance as soon as the reel attains any speed.

Most producers prefer to uncap all combs to a uniform thickness. This tends to equalize the weight. Sealed combs spaced close will weigh much less than combs that are spaced wide with only 9 or even 8 in a super. After uncapping, if the knife cuts to a fairly uniform depth of cell, the over weight is cut off and the combs are equalized. Aside from the desirability of getting the combs equal in weight, it is always better to extract from combs having cells about the same depth. It takes longer to extract from deep cells than from shallow cells, and other things being equal, more honey will be left in deep cells than in shallow cells, especially if the honey is thick or the temperature cool.

Some producers, instead of setting certain combs aside, prefer to skip a space each time when loading, going around again to put combs in the spaces in between. While this tends to equalize the weight, it is not so good a plan as that of putting very heavy combs or very light combs by themselves so that combs of the same weight can be placed opposite each other in the extractor.

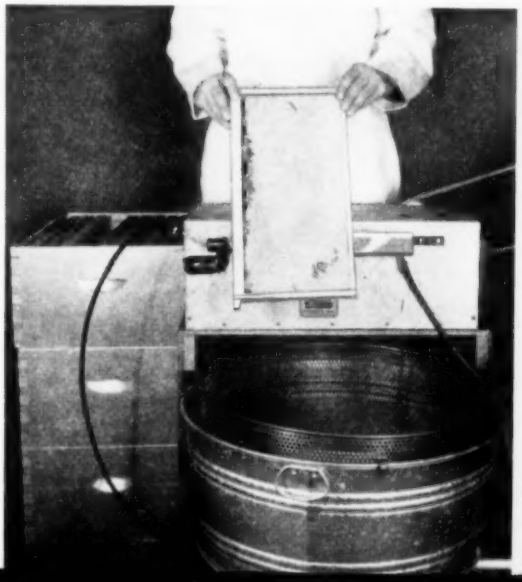
About the Honey Removed with the Cappings

Some argue that the thinnest possible layer of cappings should be cut off with the uncapping knife, in order to avoid having so large a proportion of honey come in contact with hot wax and propolis in a capping melter. If the honey and cappings are separated by gravity, by pressure, or by centrifugal force, there is no object in removing thin layers of cappings. Furthermore, it takes longer to take off thin layers of cappings than heavy layers. Even if a capping melter is used, as much honey as possible should be separated first without heat, for honey may take on an unpleasant taste from hot propolis and the color of the wax may be injured likewise. Do not be alarmed at finding that half the weight of dried cappings may be honey. Honey weighs much more than wax and even if half the weight is honey the amount left may be only one or two per cent of the original amount cut from the combs.

Dangers of Fermentation

Thick honey may ferment and thin honey may not ferment. Much depends upon the yeast present. And yet, other things being equal, the dangers of fermentation are infinitely greater if the honey is thin. Every effort should be made to keep the water content in honey low. Most buyers will either refuse honey with a high water content or offer less for it.

The old rule that a comb must be ⅔ or ¾ capped over, is good as far as it goes. Under some conditions, the honey from a comb ¼ capped over may be thicker and more salable than that from another comb which may be almost entirely capped over. Unfortunately, bees will sometimes cap honey that is too thin. In rare cases they will cap honey that has already started to ferment. The same rule cannot be followed in a wet season that is ordinarily safe in



Uncapping into a basket strainer. Note pipe at lower right leading to the honey pump.

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Placing uncapped comb into extractor.

Emptying drained cappings into extractor equipped for drying cappings by centrifugal force.

a dry season. Much more care is necessary in a wet season. Of course, this does not mean that no care need be used in a dry season. If all producers would remember that whenever the atmosphere contains a great deal of moisture, extra precaution is needed, there would not be so much thin honey dumped on the market.

Extracting on a rainy day may be all right if the honey is extra thick to start with, but it is penny-wise and pound foolish to extract honey that is none too thick anyway when it is raining hard outside and when the inside atmosphere is fairly reeking with moisture. Better let the crew work at something else than to extract honey under conditions that permit the absorption of added moisture until the honey is dangerously thin.

I have told this story at a number of beekeepers' meetings; it will bear repeating here, for an unintentional blunder taught me a lesson.

On a certain Saturday morning, I was extracting honey. The combs were well capped over, on the average, and the honey was fairly thick. It was a warm day and two windows were open with bee escapes in the upper corners of the screen. The uncapping was done at some distance from the windows, so an electric light hung overhead, for I always want plenty of light for uncapping. Intent on my work, I was unconscious of

gathering clouds until the sky in the west was fairly black.

At noon, it so happened that I had nearly 100 combs uncapped ahead, but as there was very little drip, I thought nothing of it. Unexpectedly called away in the afternoon, I went back to the extracting house just long enough to stack up the uncapped combs over metal hive covers turned upside down underneath the supers.

It rained all Saturday afternoon, and all day Sunday. Since there was nothing that could be injured, I had not closed the windows.

On Monday morning the concrete floor of the extracting house had a layer of thin honey several yards across. The honey in those hundred uncapped combs had absorbed an enormous amount of moisture from the wet atmosphere and had drained out of the two stacks of supers until the inverted hive covers had overflowed. The thinner the layer of honey, the greater the exposure and therefore greater amount of moisture absorbed.

Every beekeeper should try the experiment of putting a saucer level full of honey in an ice refrigerator where the air is ladened with moisture. It is well to put another dish under the saucer for, of course, the honey will absorb enough water to run over.

Steam in the Extracting Room

Steam is often a necessity in the modern honey extracting plant. Frequently, the exhaust steam is allowed to be absorbed by the atmosphere in the room. In a short time the air will be fairly reeking with moisture, making it not only much more uncomfortable for the workers but very bad for the exposed honey. Water on the floor, water in the air, both do untold damage. For best results the exhaust steam should be piped out-of-doors, and every precaution taken to keep the atmosphere of the extracting room as dry as possible.

Draining or Drying Cappings

It is generally agreed that the thickest honey lies next the capping, therefore this means that the honey clinging to the cappings has the greatest capacity for absorbing water. Users of capping melters frequently claim that the more quickly the honey is separated from the cappings the greater the protection against absorption of water. This may or may not be true. Water absorption takes place faster when honey is heated than when it is cold. The warmed honey therefore has a greater capacity for absorption of moisture from a wet atmosphere than if the honey is not heated at all.

While on this subject of capping melters, it is well to point out again, that honey is capable of absorbing not only moisture but flavors. If ordinary precautions are taken there is no danger that capping melter honey may be ruined or rendered unfit for sale, but there is plenty of danger that its flavor may be altered by the contact with the hot wax, especially if the cappings are dark or if, as so often happens, particles of cocoons are cut off with the cappings. The waxy flavor so often referred to rarely comes from wax at all, but from cocoons and propolis. The darker color may not be the result of overheating but from the absorption of certain coloring matters from the hot cocoons.

Honey is the purest and safest sweet. Producers, everywhere, should jealously guard its good reputation.

Two Old Pioneers in the Bee Business

I am glad to introduce to you my brother-in-law, J. T. Calvert, 78 years old and R. Powell, of Riverside, Calif., 83, both of them young in body and spirit. Powell—he is a little chap but as vigorous and spry as a Banty rooster. He owns and operates some 800 colonies at Riverside, California. J. T. Calvert, son-in-law of A. I. Root, was for 30 years General Manager of The A. I. Root Company and is now Secretary and Auditor of the Company. Like his brother-in-law, E. R. Root, he was visiting last winter in California.—E. R. Root.

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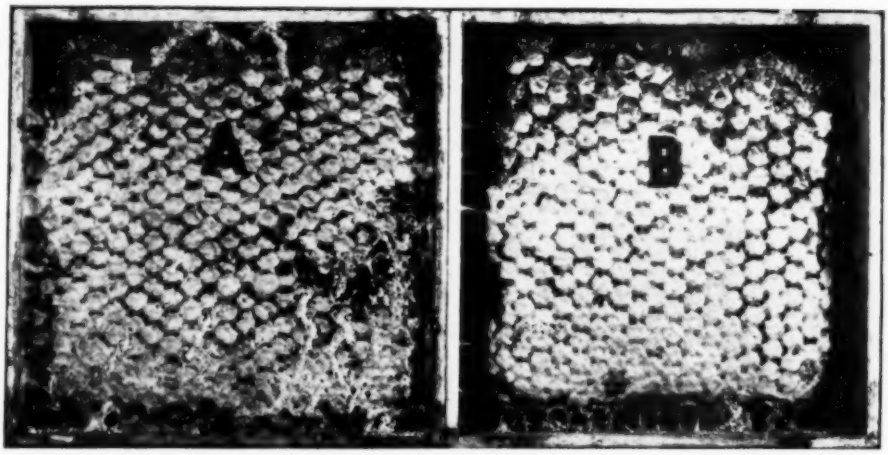


Injury to comb honey by wax moths. A, by the greater wax-moth larvae, on sections removed from supers and stored in a room not accessible to adult moths. No other adults developing. B, by 50 larvae of the lesser wax moth (size ¼ mm.) taken from brood comb. Note that there is very little injury on the comb surface.

Moth Pests of Honeybee Combs[1]

By V. G. Milum
Apiculturist at University of Illinois.

The injury by the larvae of various species of moths to stored brood and extracting combs, the combs in weak colonies and to comb honey after removal from the bees, is one of the more serious problems of the beekeeper in areas where moths are prevalent. As a result, there is a definite economic loss which demands the consideration of most beekeepers in these localities.

There probably is no other subject in beekeeping that contains as many incorrect ideas and statements in the minds of beekeepers and the literature as that of wax moths. A part of this is due to the fact that there are several different species of moths whose larvae infest combs of honeybees, the various life stages of which are often incorrectly identified because of lack of a careful examination without specific determination. A few general misconceptions which are untrue are as follows: "Wax moths have killed off my bees"; "The wax moth millers fly to lights"; "The small moths on combs are lesser wax moths"; and "The injury on comb honey is due to the lesser wax moth".

The more thrifty races of bees such as the Italian are considered to be more efficient in keeping wax moth larvae from infesting their combs than are the common black bees. Weak colonies of the latter are very likely to permit the depredations of the larvae which with their webbing may increase to such an extent that the bees are actually driven (abscond) from the hive because of the obnoxious odors. However, in most cases where beekeepers claim that the wax moths have killed off their colonies, a more serious condition prevails. It is not unlikely that the colony has first been weakened by AFB. Due to the decreasing number of bees reaching the adult stage, such colonies gradually grow weaker and weaker with the result that the wax moth larvae gradually gain a foothold and the beekeeper who does not recognize the symptoms of AFB lays all the blame to wax moths.

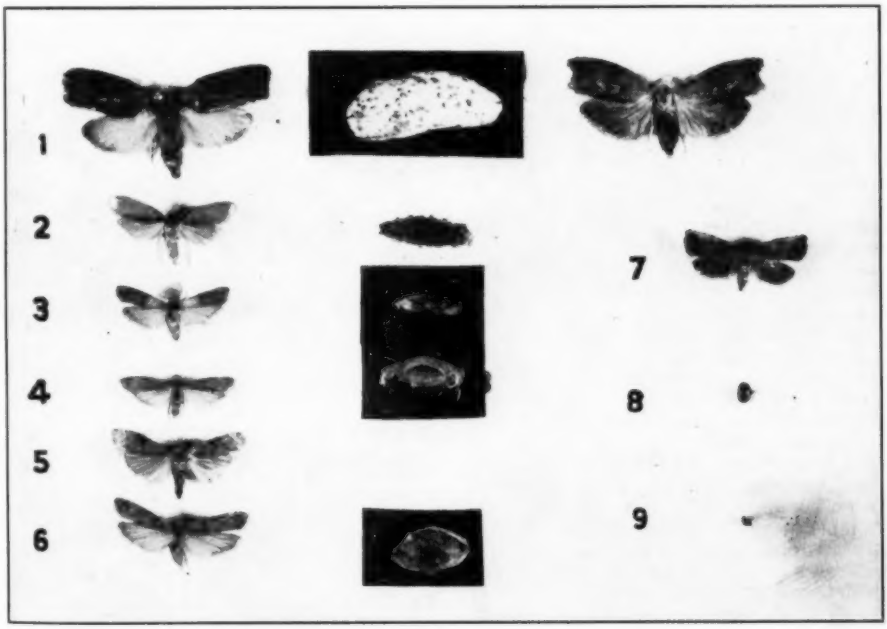
In general, wax moth insect injury occurs to brood combs, extracting combs, comb honey and other wax materials that have been removed from the protection of the bees and stored at a temperature favorable to the hatching of the eggs and development of the larvae. While strong colonies of bees seldom permit any wax moth larval feeding, occasionally even in the strongest colonies, single larvae of the greater wax moth may be found tunnelling beneath the

[1]Contribution No. 210 from the Entomological Laboratories of the University of Illinois.

cappings of developing brood. Eventually these larvae are caught by the bees, killed and carried out the entrance. Likewise, a few larvae sometimes may be found under entrance blocks or parts of the hive where bees do not have proper access. In the construction of hives, especially of the home-made type, proper bee spaces should be provided to eliminate such conditions.

Of the moths whose larvae infest combs of honeybees, the most common in the greater portion of the United States is the greater wax moth, *Galleria mellonella* L., the smaller adult forms of which are often erroneously called the lesser wax moth. (See Gleanings in Bee Culture, 63: 662-666.)

When an abundance of old brood combs are available for the food supply of the larvae of the greater wax moth, normal sized adults are produced. If the food supply is reduced or is insufficient for full growth of the larvae, the larvae eventually pupate and the resultant adults that emerge are smaller than the normal adults. Often these smaller adults are identified incorrectly as the lesser wax moth. This condition commonly happens when several generations of worms feed upon the combs of a hive or other container of old combs, the earlier generations developing adults of normal size, the later generation adults being increasingly smaller and smaller, some even being smaller than the normal sized adults of the actual lesser wax moth. Similarly when the greater wax moth larvae feed upon comb honey no adults are produced except where a small source of protein is available as from pollen cells or drone brood cells, the few adults that develop because of their small size are often incorrectly called the lesser wax moths. The statement often made in the literature and by beekeepers that the injury to comb honey is the work of the lesser wax moth is in most cases incorrect, the greater wax moth being the greatest offender. Likewise, the larvae of the bee louse, *Braula coeca* Nitzch is often blamed for the actual injury of the greater wax moth, since the tunnels of the latter beneath the surface of the cappings



Adults and pupae of honeybee comb infesting insects—1. Female, pupa, and male of greater wax moth. 2. Adult and pupa of lesser wax moth. 3. Adult and pupa of Indian meal moth. 4. Adult and pupa of almond moth. 5. Adult of Vitula edmandsii. 6. Adult and pupa of Mediterranean flour moth. 7. Adult of codling moth (larvae may crawl into hives for pupation, no injury to comb.) 8. A Dermestid beetle whose larvae feed on dead bees or brood and pollen. 9. Adult of the bee louse whose larvae tunnel in cappings. (Actual size about one-fourth larger.)

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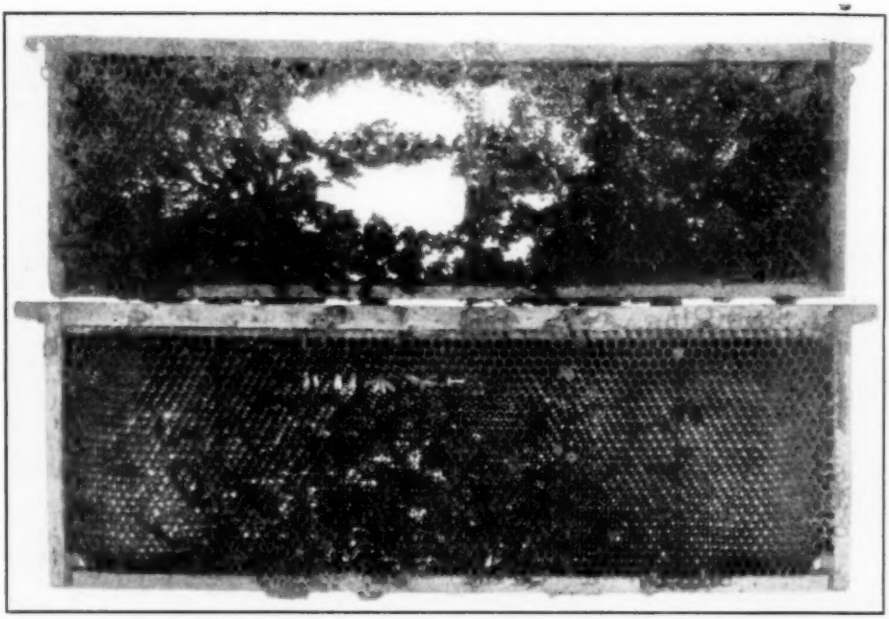


Stages in the destruction of a comb by the larvae of the lesser wax moth. Adults are visible on the lower comb, pupal cases on the upper.

of comb honey are quite similar to the larval tunnels of the bee louse. Of the remaining moths discussed in this article, only the larva of *Vitula edmandsii* Pack., a common pest of bumble bee nests, is known to injure comb honey to any extent, although the Indian meal moth may occasionally cause slight injury.

The descriptions of the various insects attacking combs listed in this article are the main known available characteristics and identifying characters which enable one to distinguish between the species. One who is familiar with the habits and characteristics of the various species can readily distinguish all except the Mediterranean flour moth and *Vitula edmandsii* which closely resemble each other both in the larval and adult stages. Since the most common invaders of combs are likely to be the greater wax moth or the Indian meal moth, a careful study of the figures and descriptions should enable the average person to correctly identify the species ordinarily present. Keys (21)[2] for the identification of all the species listed are being prepared which is hoped will be satisfactory for determination of species, especially adults and larvae.

[2]Numbers in parenthesis refer to literature cited at end of article.

Greater Wax Moth,

Galleria mellonella (L.)

The most common of all comb infesting moths, the greater wax moth, apparently has world-wide distribution, except in colder climates and high altitudes, including some portions of our western states.

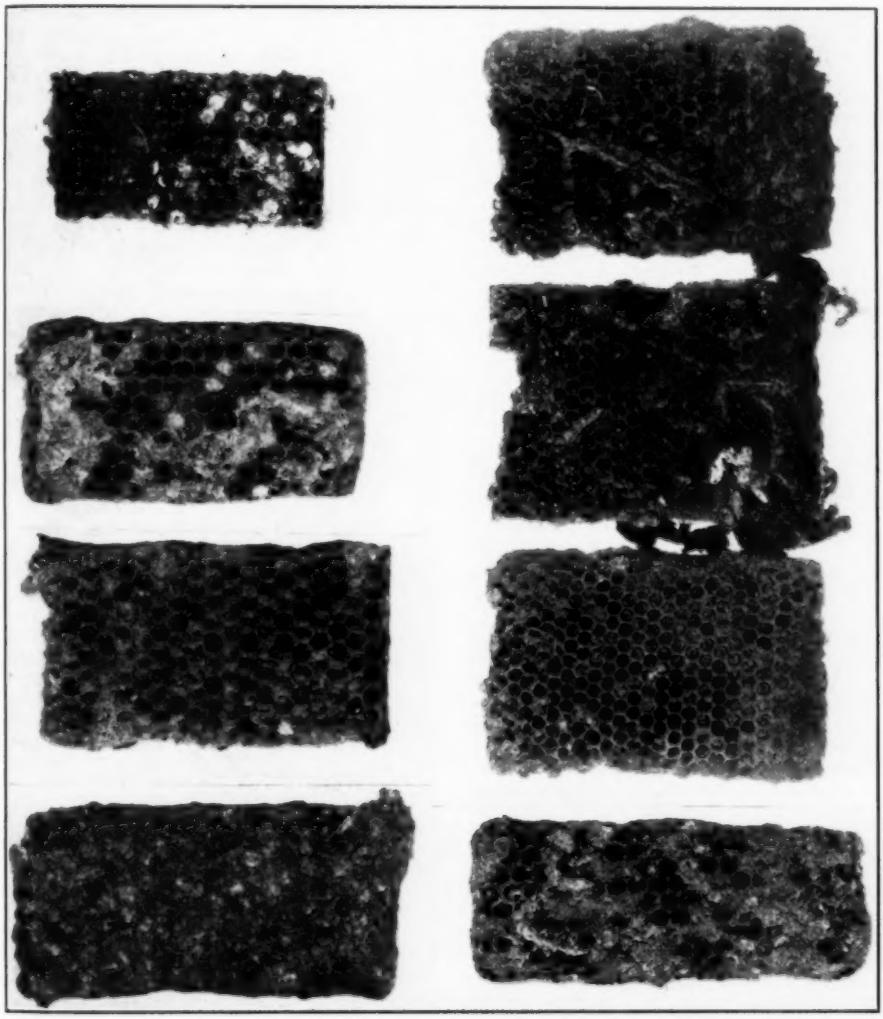
The younger larvae are grayish white, active, rapid running, giving appearance of only using the three pairs of more prominent thoracic legs. Older larvae are solid, dirty gray in color, up to 1⅛ inches in size, eight pairs of legs on the thorax and abdomen equal in size. The oldest larvae are more plump than those of the lesser wax moth. The rate of development is dependent on the temperature and amount of food available, with an average larval period reported by Chase (5) of 28.85 days at 35°C. (95°F.). Larval setal maps are given by Fracker (9).

Larvae feed at first on isolated portions of comb, gradually assembling in a mass of webbing from which tunnels extend through the remainder of the combs in search of food consisting of the meconium, cast larval skins and the pupal cases of the bees lining the cells, either with or without pollen. Practically all

damage to comb honey is caused by this species where present, the adult not being developed except with some supply of the foods listed above other than wax. Its injury to cappings of comb are often incorrectly identified as the damage of *Braula coeca* Nitzch, the bee louse, or of the lesser wax moth, *Achroia grisella* Fabr.

The pupal cases up to 1⅛ inches in length are usually white but may be covered with scattered bits of frass. They are usually spun in rows or tiers side by side, the larva first grooving out a shallow place in the wood of the frame or other portion of the hive. Chase (5) reports an average pupal period of 7.2 days at 95°F. (35°C.)

The boat-shaped adults range from ¾ to ⅞ of an inch in length, with a wing expanse up to 1¼ inches. The general dorsal or top color is mottled brown to ashy gray or purplish, silver gray or purplish, turning to light silver gray with fraying. The under-



Typical injuries of five species of comb infesting moth larvae. Left side, two top—early and more advanced stages of injury of Mediterranean flour moth, two bottom—almond moth injury 24 and 59 days after introduction of adults or after feeding of one and two generations of larvae, respectively. Right side, top to bottom—Injury of greater wax moth, lesser wax moth, and early, and more advanced stages of injury of Indian meal moth.

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wings are creamy white. The front ⅞ of the outer wings are folded at a sharp angle downward, with a sharp angle at tip. The head is a light gray to light brown. Females have two short palps on the front of the head which easily distinguish the sexes. The outer margin of the forewing of the male is deeply scalloped and fringed.

The wing pattern of the front wing is figured by Suire (25), the hind wing by Hayes (12). The cubitus vein of the hind wing is 4-branched.

The nearly spherical, smooth, creamy white eggs are deposited in groups in cracks and crevices of hives or comb, only occasionally on open surfaces. Various authors state a variation of 400 to 1800 eggs per female, Milum and Geuther (20) reporting a variation from 400 to 839 with an average of 754 for a group of 12 females. The writer has since counted as high as 1610 eggs oviposited by a single female, 450 of which were deposited as early as 30½ hours after completion of copulation, continuing over a 15-day period with only 19 eggs laid on the day preceding the death of the female. Paddock (23) reports egg laying over a 3-13 day period at 3-15 days of age, the eggs hatching in 10 days in Texas. The total life period from egg to adult may be less than two months, the figures given in this discussion indicating a generation in as short a time as 49 days at more or less optimum temperatures.

Lesser Wax Moth,
Achroia grisella Fabr.

This species apparently has a scattered world-wide distribution in temperate to tropical climates. The reported abundance in some regions is doubted because of the confusion in identification.

The young larvae are white in color, gradually becoming darker gray, not as dark but more nearly resembling greater wax moth than any other of the species attacking combs. The younger larvae, the first and seconed instars, according to Kunike (15), roll or curl in a spiral or snail-like form if prodded or shaken from combs. This habit is a definite distinguishing character from the other species listed here. Full grown larvae may attain a size up to ¾ of an inch.

The larvae of the lesser wax moth are more distinctly scavengers than those of the greater wax moth, feeding on brood combs with and without pollen and in frass or other debris in the bottom of the hive. Forbes (8) states that it also eats dried apples, raisins, crude sugar and dried insects. Kunike (15) states that it is not reared on dead bees. Soon after hatching, individual tunnels are constructed by the larvae and covered with frass, excreta, bits of wax and particles of comb, extruding their heads and parts of their bodies to secure food. In brood combs, the greater portion of the first tunnels are along the midrib. Contrary to popular opinion, they do little, if any, damage to comb honey under normal conditions, our experiments indicating that the larvae will crawl away from comb honey if not confined to the combs.

Pupation is in tough cocoons up to ½ inch in length, within or outside of the food mass. The outside of the cocoon is completely covered with bits of frass before completion giving it a dark color. They are usually separate from other cocoons, not laid side by side as is common with the greater wax moth.

The adult body is flattened, with a solid silver gray to buff color on both pairs of wings and body, varying from ½ to ⅜ of an inch in length, with a wing expanse up to ⅝ of an inch. When folded the wings overlap slightly at the tips. The head is distinctly yellow. The females are the largest in a given culture, but the sexes are not easily determined except by the more nervous activity of the males and fanning of their wings, the females by egg laying activities. Close observance of the females reveals a pair of short dark brown palps, one on either side projecting outward seemingly from the inner margin of the compound eyes. The wing pattern of the front wing is figured by Suire (25), the hind wing by Hayes (12). The cubitus vein is 3-branched.

A lesser wax moth female may mate soon after emergence with more than one male for individual periods as long as three hours. Egg laying may occur as early as five hours after mating.

The eggs are nearly spherical, creamy white, deposited in cracks and crevices or in debris, usually 250-300 in number, as high as 460. Kunike (15) reports that the eggs hatch in 5, 10 and 22 days at temperatures of 86°F., 68°F. and 60.8°F., respectively, but are killed above and below these limits.

(To be continued)

Green beans have "flavor-plus" when canned with honey.

This Month We Cook and Can

By Mrs. Benj. Nielsen

Nature's Finest Sweet Takes No Back Seat During Hot Summer Months

Ho hum! it's too hot to cook these days—almost too hot to even think about cooking, isn't it? And canning season coming on too! Guess there's nothing else to do but get busy and try to hold before us the thought of how good all of these things are going to taste when wintry winds blow and the snow piles high. Right now it's mighty hard to vision a snowdrift—with the old thermometer soaring so!

At our house we are very partial to baby beets—those first tiny, sweet, garden fresh offerings. We always plan on making a number of successive plantings, planting the seeds quite thickly; then carefully thinning the plants out when the beets are no larger round than a half dollar, we pop them into the jars—whole—while they are tender and sweet. Even with this good start, somehow they always seemed to lose a part of this desirable sweet quality in the canning process until we tried the honey method. I hope you'll like them as much as we do! Wash freshly gathered small beets, of uniform size; leave on tails or roots and an inch of the stems to prevent "bleeding" and subsequent loss of color. Extra care should be used to remove all of the dirt and grit, as we shall use this first water later on in the canning process. Cover the beets with clean water, bring to a boil and boil about 15 minutes, or until the skins can be slipped off easily. Reserve the water in which the beets were cooked. Slip skins off and pack beets in clean, freshly sterilized quart jars, add one-half teaspoon of salt and 1 tablespoon of honey to each jar and fill with liquid saved from cooking beets. It is wise to dip this liquid from the container, as there usually is a deposit of sediment in the large container. Adjust lids and process the jars in a hot water bath for 2 hours. Begin to count time when the water boils freely. Remove jars from bath and complete the seal. Allow to cool. Then store in a dark place to preserve the deep red color. If a pressure cooker is used, cook 40 minutes, at 10 to 15 pounds pressure. When processing in the oven, cook 3½ hours, at a temperature of 250 degrees F. At serving time heat the beets in the liquid in which they were canned, simmering gently for a few minutes. Add butter if desired.

To many folks canned green, or wax beans, seem flat and insipid in comparison to the fresh ones. Yes, you've already guessed the remedy for that, haven't you? It's honey, of course. Just can them with honey and watch the flavor step up. One of the nice advantages (and there are so many) to canning beans by this method we have used so long, is the very short time it takes in a very rushing season. And don't worry about them spoiling, either. I've never lost a jar of beans prepared by this easy method. And they are cooked, at serving time, just the same as beans fresh from the garden. Use a generous piece of side pork, or bacon, cook in the usual way and be prepared for a real taste thrill.

Canning Green Beans

To one gallon of washed and snapped wax or green beans, add salt to taste and water to cover. Then add 1 cup each of honey and vinegar. Bring to a boil and boil hard for 20 minutes. Pack beans in freshly sterilized jars, fill to overflowing with the liquid and seal at once. To serve, drain off the liquid, wash beans twice in cold water, then cook and season like fresh beans.

Some hot day when you'd like a

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How about some velvety smooth honey ice cream.

refreshing dessert that isn't too much work, wash and pit some of your ripest cherries, drizzle them with honey and place them in the refrigerator to chill. Easy, delicious and a sure repeater!

When you are hot, tired, and perhaps a wee bit cross, there's nothing more refreshing than a heaping dish of velvety smooth honey ice cream.

Velvet Ice Cream

Two cups milk, 3 egg yolks, ⅓ to ½ cup honey, ⅛ teaspoon salt, 1 teaspoon vanilla, 3 egg whites, and 1 cup whipping cream.

Scald the milk. Beat the egg yolks until thick and lemon colored. Pour the scalded milk over the egg yolks, beating constantly. Add the honey and salt. Cook over rapidly boiling water until the mixture coats a silver spoon. Cool. Add vanilla. Fold in the stiffly beaten egg whites and the whipped cream. Pour into a freezing tray and freeze to a mush. Remove mixture to a cold bowl and beat with a chilled rotary beater until smooth. Finish freezing. If frozen in a hand freezer it is not necessary to whip the cream. Serve with

Honey Chocolate Topping

Two and ½ squares of unsweetened chocolate, ½ cup cold water, ⅔ cup honey, a few grains of salt, and 1 teaspoon vanilla.

Grate the chocolate, add the cold water and place over rapidly boiling water. Cook for 5 minutes, stirring constantly. Add honey and salt and cook 5 minutes longer. Remove from heat. Cool slightly and add the vanilla. Pour into an air-tight jar and seal. When cold, store in the refrigerator, using as needed. Chopped nutmeats may be added, if desired, or sprinkled on the topping. Sprinkling this topping with finely crushed peppermint stick candy makes another yummy treat.

Honey Cherry Ice Cream

One cup cherries, ⅓ cup honey, 2 cups milk, 2 egg yolks, ⅓ to ½ cup (additional) honey, 1 teaspoon Knox Gelatine, 2 tablespoons cold water, ¼ teaspoon salt, 1 teaspoon almond flavoring, 2 egg whites, and 1 cup whipping cream.

Wash and pit the cherries; put them through a food chopper. Combine with the ⅓ cup honey and let stand while preparing the remaining ingredients. Scald the milk. Beat the egg yolks until light and lemon colored, adding the honey gradually. Dissolve the gelatin, which has been softened with the cold water, in the milk mixture. Cool. Add flavoring and salt. Beat egg whites until stiff and fold them into the mixture. Fold in the whipped cream. Pour into a freezing tray and partially freeze. Remove mixture to a cold bowl and beat with a chilled rotary beater. Add the sweetened cherries and finish freezing. If made in a freezer, add the cherries when partially frozen.

Lemon Cream Sherbet

Two eggs, ½ to ¾ cup honey, 1 cup milk, ¼ cup lemon juice, 1 teaspoon of grated lemon rind, and 1 cup of thin cream.

Beat the eggs until light and lemon colored; beat the honey in gradually. Combine with the milk, cream, lemon juice and rind. Pour into a freezing tray and partially freeze. Then remove mixture of an ice-cold bowl and whip with an electric or rotary beater (chilled) until the mixture becomes light and creamy. Return to the freezing tray and finish freezing.

Do the youngsters want to spend all of their allowance for those tall,

cooling drinks at the corner drug store? They won't if there's plenty of sparkling, honey-sweetened root beer in the refrigerator, at all times.

Honey-Sweetened Root Beer

In a large bowl or crock pour 4 pounds of honey, add the contents of 1 bottle of Hires R-J Root Beer Extract and mix thoroughly. Dissolve this mixture in 4¾ gallons of lukewarm water. Be sure the water is lukewarm, not hot or cold. Then crumble ½ cake of Fleischmann's Yeast (the small ½-ounce size) in 1 cup of lukewarm water. (Do not use more yeast than specified, otherwise the drink will be unpalatable. And be sure the yeast is fresh. If it is not, the beverage will not effervesce when opened.) Stir to dissolve thoroughly. Then add this to the solution of honey, extract, and water. Stir to dissolve thoroughly. Then add this to the solution of honey, extract, and water. Stir very thoroughly and bottle immediately, fastening the corks in securely or sealing with crown caps and a capper. Fill the bottles to within ½ inch of the tops—more air space may cause spoilage. Then place the bottles on their sides in a warm place AWAY FROM DRAUGHTS, until effervescent. If set in a cool place, unprotected from draughts after sealing, the beverage will sour and remain flat. It should be ready to drink two or three days after being bottled. Chill thoroughly in refrigerator before serving. It's delicious! It's refreshing! Unexpected guests are no tax on the hostess who has this sparkling beverage and good honey cookies at hand.

Spiced Ice Tea

Two cups boiling water, 4 teaspoons black tea, 2 cups honey, 5 leaves of mint, 1 teaspoon whole allspice, 1½ cups strained orange juice, ¾ cup strained lemon juice, and 4 quarts iced water.

Add the tea to the boiling water; add honey, mint leaves, allspice; then cover and let stand for 10 minutes. Strain and add the fruit juices. Add water, then pour over cracked ice in tall glasses.

Honey Oatmeal Quickies

One cup butter, ½ teaspoon salt, 1 teaspoon cinnamon, 1 teaspoon allspice, ½ cup brown sugar, ½ cup honey, 2 eggs, 2 cups quick cooking oatmeal, ½ cup chopped raisins, 1 cup nutmeats, chopped, 3 cups sifted flour, 1½ teaspoons soda, and ¼ cup milk.

Combine butter, salt, and spices; blend well. Add sugar and honey gradually, cream until light and fluffy. Add well beaten eggs and mix thoroughly. Stir in oatmeal, raisins, and nuts; mix well. Sift flour; measure and resift with the soda. Add alternately with milk to first mixture, blending thoroughly. Drop well apart on well-oiled cookie sheets. Flatten slightly. Bake in a moderate oven, 350 degrees 12 to 15 minutes.

Honey Picnic Cookies

One-half cup butter, ½ cup honey, ½ cup brown sugar, 1 egg, 2½ cups sifted flour, ¼ teaspoon soda, ½ teaspoon ginger, ½ teaspoon cinnamon, ½ teaspoon cloves, and ½ teaspoon salt.

Melt the butter in a saucepan; add honey and brown sugar; cool. Stir in the unbeaten egg. Sift flour; measure and sift with soda, spices, and salt. Add to first mixture, beating well. Shape into rolls about 2 inches in diameter. Wrap in heavy waxed paper; chill. When ready to bake, cut in ⅛ inch slices and place well apart on baking sheet. Bake in a moderate oven, 350 degrees F., 12 to 15 minutes.

Honey-sweetened Root beer is a healthful and delightfully refreshing hot weather beverage.

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The home of Julian Joubert's Italian bees on the highway to Mount Ranier. The bears come down for their dessert but are discouraged by trapping by the beekeepers.

The Beekeeper of Enumclaw

By Harriet Geithmann

On his wilderness farm of forty acres just out of Enumclaw, Washington, Julian Joubert and his wife, Lillias, are making a name for themselves in the business of beekeeping in the Pacific Northwest. Their rustic stand built of cedar shakes and logs and a rough stone fireplace faces U. S. Highway No. 410 en route to Chinook Pass and Mount Rainier.

Over their log counter are sold three high grade products of the Joubert apiary of 250 hives of leather Italian bees. This apiary fronts the highway among the stumps six miles nearer the mountain. These three products are wild flower honey in the comb, jar, and five-pound pail, Christmas candles, and honey caramels.

The honey produced at the rate of 32,000 pounds in 1938 and 11,000 pounds in 1939 is from purple fireweed, five feet tall, and other wild flowers from this mountainous region. This is the honey that brings home the bacon, the blue ribbons and substantial checks from the annual Western Washington Fair of Puyallup in the Valley of the Mountain.

Across the highway from this "stop, look, and listen" stand is the warehouse among the evergreens. Here in his workshop the beekeeper is usually to be found hard at work building beehives, frames, and shipping crates, hexagonal in shape, an idea borrowed from his bees. Here runs the boiler furnishing power for his wood-saws. Here is his office where he prints his own labels on his own printing press from his own woodcuts. Here the beekeeper grades his honey before he extracts it. He believes that this is well worth while because of those discriminating customers of his who can tell that his honey is in a class by itself just by tasting it. He maintains that others taste through the eyes only and therefore the stand and labels do their stuff. "After all," muses this philosophical beekeeper, "honey, if anything, calls for all this effort to do the thing right and all the world knows that the same effort applied to other commodities would win a certain measure of success".

In this same warehouse, a regular beehive in itself, are the Christmas candles created from beeswax. In 1938, this Enumclaw beekeeper manufactured by hand 500 pairs of fragrant Christmas candles which have an elusive color, a mellow blend of gray and yellow as well as a delicious fragrance. In 1939, he manufactured more than twice as many pairs ranging in length from ten to fifteen inches and in price from .50 to $1.00. These candles are shipped hither and yon in tiny boxes of spruce cut on his wilderness farm and decorated with sprigs of spruce and tied with colorful raffia. While his first candles resembled upside down turnips his present Christmas candles are slim and tapering which illustrates the old saying, "Practice makes perfect". There are many Washingtonians who buy both candles and honey from the Jouberts.

At the stand which is always presided over by the beekeeper's wife, Lillias, who incidentally looks like a fresh mountain flower herself, are the honey caramels, a delicious confection that is but in its infancy. Speaking of the salesmanship of Lillias Joubert it would be hard to find a more friendly person with a more welcome smile to sell the Joubert products of honey, candles, and caramels. She meets each car parked with skiers, vacationists, or tourists en route to and from Mount Rainier's

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alpine meadows and ski runs with a genuine desire to be of real service to them. When she finds time to take care of her three-year-old daughter, Sally, and her infant son who has not yet been named, no one hazards a guess.

Within the past six months, Julian Joubert, paralyzed from birth, has been able to discard his crutches on which he has leaned for the greater part of his 42 years. Now he is relying on sturdy wilderness canes, thanks to a new series

The rustic stand on U. S. Highway No. 410 where the Jouberts sell their fragrant candles, their wild flower honey and their honey caramels, three products to skiers, vacationists, and tourists en route to or from Mount Ranier.

of osteopathic and electrical treatments, which he has discovered in Seattle. In the face of this handicap and in spite of it, Julian Joubert has made a name for himself in the annals of beekeeping in the State of Washington and because of his success in this field it is a significant fact that when the writer asked the agricultural authorities of this state to suggest an outstanding character in the business of producing honey, they pointed with pride to Julian Joubert, beekeeper of Enumclaw.

Seattle, Wash.

Here is Julian Joubert, the beekeeper himself with his helmet and beard of bees.

Package Inserts for Honey

By Emory Ward

It started several years ago when a local beekeeper purchased a tube of shaving cream. Wrapped about the tube was a package insert explaining how the product could best be used, and also suggesting further uses for the item. Other products were supplied with the same supplementary literature, the beekeeper remembered—small pieces of literature attractively printed serving as missionaries to keep the purchaser "sold" on the product by explaining carefully how the best results might be obtained.

Suddenly, as he fingered the tube of recently acquired shaving cream, the beekeeper decided that if the bigger manufacturers could keep their purchasers sold through the use of missionary material accompanying each package, he, too, could do the same with his honey sales.

As a result, the local printer was soon preparing a variety of small package inserts to accompany each honey sale which the beekeeper made. Short, terse, and interestingly written, each article told of some practical use for "Nature's Sweet", and served as an encouragement for the individual to use more honey.

One insert announced:—

"You are now tasting Nature's Sweet—the purest, healthiest sweet food available. In purchasing this product you are assured of complete purity and healthfulness—there is no adulteration, no imitations, no substitutions—only the genuine product in all its health-giving freshness. Doctors prescribe it, dietitians recommend it, and children beg for it. It is a health sweet developed by nature that man cannot imitate.

"It adds much to a variety of recipes, making the dish more tasty, more appetizing. It is a health food that should be found on every table. Gathered from nature's fields by nature's helpers, and sealed untouched by human hands, it offers all the protection and health to consumers.

"You'll want fresh, pure honey at hand at all times. When the supply runs low, call J-2894 and a fresh supply will be delivered to your door immediately."

Another package insert declared:—

"Here is a health-food that no human hand has touched. It comes to you exactly as produced by Mother Nature, filled wth all the health-giving elements that cause doctors to prescribe it, and experienced dietitians to recommend it.

"You know its excellence when used on your morning cereal, and you are already aware of its deliciousness when applied on hot biscuits, but have you ever tried hot honey muffins? The recipe follows."

A third insert slanted specifically to mothers, declared:

"Here's the answer to that eternal problem of what to give Bobbie, Mother—here's sweet that children love, and one that is actually good for them. It's nature's sweet, Mother—the health food that nature mixes in her own laboratory.

"It's a health food that leading doctors and dietitians recommend without a moment of hesitation. It comes in the original package untouched by human hands with all the guaranty of freshness and purity.

"Let the youngsters eat as much as they want—on their bread, on their cereal, in any form—it won't harm them. It's nature's own sweet that is healthy and tasty. Keep it before them at all times."

Other inserts of similar tone stressed the assured purity and healthfulness of the product, and included recipes which advocated the use of honey. Each included the beekeeper's name and address at the bottom with the notation that a fresh honey supply would be delivered immediately upon receipt of a phone call.

The package inserts, which were included in each package of honey, soon gave evidence of their value. Telephone calls, post cards, and letters brought in orders for more honey as the present supply lowered. Housewives reported they were filing the recipes in their index cases for future reference since the initial dish had been so tasty.

The success of the package insert soon brought additional business and extra profits, and the main difficulty soon became how to obtain a sufficient supply.

Toledo, Ohio.

Black Hives

By Allen Latham

One dislikes to be misquoted and naturally likes to correct a false statement that has been spread about. At a summer meeting of the Connecticut Beekeepers' Association I made some remarks about black hives versus white hives, incidentally remarking that my apiaries looked like collections of coffins while most apiaries looked like a graveyard with its white headstones.

In my remarks I told of an experiment which I used to carry out while a teacher of science in Norwich. Two empty tomato cans were stripped of their paper and half of each was painted black or coated with lampblack. The two cans were then filled with hot water. Pupils were then blindfolded and the hand of a blindfolded pupil was placed between the two cans, which were six inches apart. The cans were then turned so that a bright side and a black side would be towards the hand. When asked on which side of the hand was the black surface no pupil failed to answer correctly. If both black sides were towards the hand or both bright sides he could give no answer, but immediately if the two surfaces were one black and the other bright, the pupil never failed.

Now Mr. Pease, who quoted me, failed to understand all my remarks and got only half the truth. A half truth is often worse than a whole lie. Mr. Leslie Burr on page 678, November, 1939, Gleanings, makes my position still blacker when he says that Allen Latham says that a black hive repels the heat.

Black does not repel heat when it comes in wave form, but absorbs it. Heat, however, comes and goes. It will leave a black surface much more rapidly than it will a white surface. One law of heat is,—a good absorber is a good radiator and a poor absorber is a poor radiator. Every housewife knows that a new tin will not bake like an old one, that a kettle with bright bottom will not boil water as quickly as one covered with lampblack.

I did, on that June day, state that a black hive might be cooler than a white hive. This is the logic of it.

The hive has five black sides exposed to air. When the sunshine is hitting two of these sides three other sides are giving off heat. If the hive is double-walled or packed it will lose more heat than it gains. It will help give off heat generated by the bees within the hive. The white hive fails to do this. In the shade black hives are always much cooler than in the sunshine. White hives in shade on a torrid day are insufferably hot for the bees. Shade and sunshine are very different in this matter.

A Word About Shade and Vicious Bees

It is my opinion that the viciousness of bees in the shade is not due to temperature. It is due to poor air circulation and too much moisture in the air. Bees are almost always cross when the air is humid.

Practically all my hives are black, not because I prefer black but because I use black roofing paper to cover them. Most of my apiaries have little or no shade, yet I do not find that the bees suffer from the heat. The hives are all double-walled so that it is only the outer wall that gets very hot. In winter it is the outer wall that gets very cold. I think that a black hive in winter if single-walled would be very bad for the bees, though the south side would warm up every sunny day and help a great deal.

On a hot day in summer the tops of my hives are so hot that the bare hand cannot be held on them. After the sun sets and coolness sets in those hive tops become actually cold to the touch.

Nearly 50 years ago I thought I would buy some black shirts. I had noted that engineers and firemen on locomotives often wore black shirts. I think this may be because they do not show black dirt so readily.

These black shirts were fearfully hot if worn in the hayfield, but if I sat down in the shade I was uncomfortably cold even on a hot day. Most tropical animals tend to be black rather than white while most polar animals are white. The tropical animal has shade. The polar animal has no shade except when the sun is down or it is cloudy. If the polar animal were black he would suffer in the sunshine and still more in the absence of sunshine. He would find it difficult to keep the proper animal

(Continued on page 469)

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From the Field of Experience

REQUEENING COLONIES AND A SAFE METHOD OF INTRODUCING QUEENS

By W. E. Dunham*

One of the best forms of insurance that a beekeeper can invest in is the annual practice of replacing inferior queens in colonies with young vigorous queens. A young queen properly introduced will insure a stronger colony for winter, and also will insure maximum brood rearing during the following spring period. Old or inferior queens should promptly be replaced so that the introduced

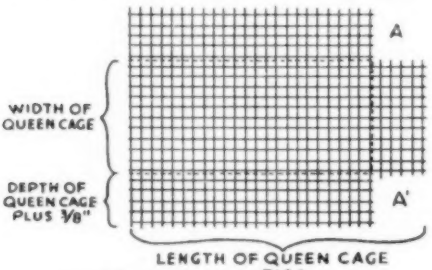

FIG. 1

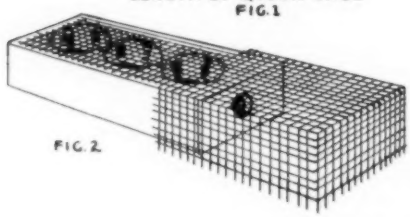
FIG. 2

queens will be laying normally by September 1. All requeening operations must be given immediate attention by beekeepers if colonies are to be properly conditioned for the fall and winter periods.

The ordinary introducing cage in which the queen is shipped does not always prove successful when introducing the queen to a colony. Probably the average beekeeper obtains not more than 85 per cent acceptance through the use of the common introducing cage. The following method will be successful even under adverse conditions and will result in approximate 100 per cent acceptance.

*The Ohio State University and the U. S. Department of Agriculture Cooperating Agricultural Extension Service, Columbus, Ohio—H. C. Ramsower, Director.

Supplementary Push-in-Cage

The push-in-cage which is used with the ordinary mailing queen cage is made from a stiff wire screening. As shown in Fig. 1 the screen should be cut the **length** of the mailing queen cage, and the **width** should be equal to the width of the queen cage plus twice the depth of the cage plus ¾ inch. At one end of the supplementary cage a square piece (depth of the mailing cage plus ⅜ inch) is cut from each corner. See Fig. 1, A and A'. The dotted lines in Fig. 1 indicate where the screen should be folded, thus making a cage which will fit over the mailing queen cage as seen in Fig. 2.

Introducing the Queen

The old queen is removed from the colony along with any queen cells that may be present. Select a place in the central part of the brood nest where there are empty cells. Remove the perforated metal on the end of the mailing cage and place the cage on the comb so the open end is in a slightly downward position. Then place the supplementary push-in-cage over the mailing cage as shown in Fig. 2. Precautions must be taken that the open end of the push-in-cage fits tightly over the mailing cage, and also that the edges of the sides of the supplementary cage are inserted to the mid-rib of the comb to prevent the premature escape of the queen. The pasteboard on the end of the cage containing the queen candy should not be removed.

In a normal colony it will require two to three days for the bees to gnaw through the pasteboard and eat through the queen candy. This is sufficient time for the queen to start egg laying on the comb enclosed by the push-in-cage and for the bees to accept her before coming in direct contact.

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INVESTIGATIONS ON THE PHYSICAL AND CHEMICAL PROPERTIES OF BEESWAX

Technical Bulletin, No. 716, under this heading, which has already been referred to in these columns, may be obtained from the Bee Culture Laboratory, Beltsville, Maryland, or

from any of the Field Laboratories. Beekeepers will find this practical bulletin not only interesting but valuable as well.

Attention is called to the harmful effect of iron or rusty iron, especially when water is present, on the color of the wax that is being melted. Beeswax is easily darkened by contact with hot cocoons, hot propolis, etc. Under "Contaminating Materials", we quote:

> Wax scales are subject to various kinds of contamination immediately after they are produced. Within the hive contamination begins when the scale wax is manipulated into the comb by the mouth parts of the bees, to which dust and pollen adhere. The wax in the comb, furthermore, is constantly in contact with propolis, pollen, honey, dust, and brood or its food or decomposition products. Under such conditions solid particles become imbedded in the wax surface, and wax-soluble odoriferous substances, coloring matter and the like diffuse into the wax. Further contamination occurs when comb or cappings waxes are rendered, because the hot wax dissolves propolis, pollen coloring matter, and foreign substances contained in the brood. Hot wax usually darkens when in contact with honey or water in vats made of certain metals.
>
> The dispersed solids in crude wax have been found to consist chiefly of dust, insect remains, bits of straw and leaves, pollen grains, rust, and many other materials with which the wax has been brought in contact during handling and processing.
>
> Deviation from either the physical or the chemical values of the scale wax as observed in the crude or treated samples, indicates contamination.
>
> **Propolis**
>
> Many plants produce bud-coating gums, called propolis, which are insoluble in water and are collected by bees for various uses within the hives. Propolis is therefore a very common constituent of the impurities dissolved in beeswax. Some natural contamination of the wax occurs, because the bees use propolis to varnish surfaces and to fill spaces between the frames that are too small for them to enter. Much more propolis contamination results from mixing and rendering "scrapings wax" with crude wax from other operations.
>
> Several samples of propolis were collected from beehives located in widely separated districts. At room temperature some of the samples were soft and sticky, whereas others were hard and brittle. The color ranged from light yellow through reddish brown to very dark brown. Jourbert reports that the yellow color of the comb wax is due to the presence of chrysine (1, 3-dioxy-flavone) originating from propolis. Most of the samples had a spicy, pungent odor somewhat distinctive of the plant source, whereas others had very little odor. Most of them tasted bitter.
>
> Propolis placed in melted beeswax dissolved partly or completely and imparted to the wax many of its physical and chemical properties. Samples of beeswax that were high in propolis, such as Nos. 43, 44, and 45, were distinctly sticky and possessed other abnormal characteristics, such as high density, index of refraction, and acid and iodine numbers.

FISHERMEN, TRY HONEY!

By Dr. A. E. Fife

If you are an experienced fisherman you have probably tried to lead many a good fish to his doom by tempting him with angle worms, grubs, grasshoppers, spinners, artificial flies, and a score of other lures. But you beekeeper-fishermen, have you ever tried honey? As queer as this idea may seem to you, it is nevertheless of interest to hear that no less a master of the art of fishing than the great Isaac Walton himself often used honey and recommends it as a bait for fish. In his classic work, "The Compleat Angler", which has been the Gospel of all men of the angle since it was first published in 1653, he frequently mentions the use of honey and affirms that it often adds just the necessary flavor to ordinary bait as to make the difference between a full and an empty creel.

Perhaps you would like to try the great master fisherman's favorite carp bait! If you do, then cut some rabbit or cat flesh up into small pieces, add bean flour, or other flour if that of the bean is not available, and mix it all together with a fair quantity of honey beating it in a mortar or working it together with your hands. When this bait is well mixed knead it into small round balls which, if properly made, will be stiff enough to cling to your hook. These balls may be made to cling to the hook better if you add a little wool. "And", adds Walton, "if you would have this paste keep all the year for any other fish, then mix with it virgin-wax and clarified honey, and work them together with your hands before the fire, then make these into balls, and they will keep all the year".

Walton also suggests the use of grubs which have been fed on honey for several days before being used as a bait and he says that "you are as like to kill this crafty fish (the carp) this way as any other". Again he recommends the use of the crumbs of white bread kneaded together with honey as a bait, especially for carp.

So in these and other instances the greatest of all the writers on angling recommends the use of honey as a bait and thus reminds us that fish, as well as bears and human beings have a "sweet tooth".

Santa Monica, Calif.

XUM

SECOND GLANCES

C. M. Isaacson

Supering for the Flow! The heading for Mr. Gooderham's article (page 353) has a pleasant sound to beekeepers—despite the labor involved in putting on the supers. His conclusion that top supering is the most efficient for the labor involved is correct in most cases, I believe. Where one is interested only in good quality honey, without regard to labor, one must super according to colony condition. No one method fits all. Occasionally a colony will leave lower supers unfinished to work in freshly added top supers, and conversely, a few will cram the brood chambers rather than work in supers placed above finished ones.

Because the Federal Division of Bee Culture makes little "noise" as to its accomplishments, many beekeepers may have come to forget the valuable work it is constantly performing. The article on page 355 will remind us of some of it. Among other things, the idea of a cotton quilt for wintering sounds interesting; if, as Mr. Dacy says, it can be made inexpensive, it has possibilities both for the beekeeper and the cotton raiser.

Many beekeepers produce little or no comb honey, but to those who do, Editor Deyell's experiences should prove of value. Many reports in recent years have mentioned a scarcity of good comb honey, and his experiments in new and **simpler** methods of production may eventually help to remedy this. Just one question, in the modified Demaree plan of swarm control described, would not the combs built from the foundation in the brood chamber be inferior to combs built in supers?

Mr. Miller's piece on supersedure swarms (page 364) brings to my mind a lot of fifteen queens I received from the South a few years ago. They were used for forming divisions about the middle of May, and evidently had been reared under unfavorable conditions, for the entire shipment was poor. The swarm trouble I had from that one lot of queens that summer exceeded all the rest of the time I have been in beekeeping. No method of prevention or control seemed to have any effect until all were finally requeened. Since then I always try to have a few queens on hand in nuclei during the summer.

We often hear of the superiority of various crosses such as the Carniolan-Italian described on page 366. Several beekeepers near me use Caucasian-Italian crosses in preference to any other bee, and report excellent success from them. One thing should be remembered in connection with these hybrids, however; in order to have them, some one must spend time and effort in keeping up the pure strains to cross. Queens reared **from** a cross are too often merely "scrubs".

The pictures and accompanying text on "The Miracle of Irrigation" tell an interesting story and offer promise to beekeepers; but to us in the Middle West who have been induced for several years to withdraw land from production, the adding of new land by expensive irrigation projects is "hard to take".

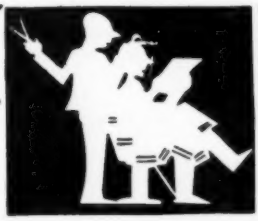
"What's in a name?" A lot, judging by the prices quoted by J. L. Byer (page 383) for **just** honey (and sometimes of inferior quality) under strange names and from far away places. Perhaps we should stop trying to push honey as an everyday product. Think up a name such as *Melilotus Alba* honey for our sweet clover product, and presto! fancy prices can be charged. It is probably the rough handling rather than the confinement that often seems to harm a queen received through the mails. Upon reading the short article on page 385, I remembered that I had five queens given me for trial by a nearby beekeeper last summer. He had brought them from the South, in April, I believe; and they had been, with others, in a queenless colony until late July, when I received them. One was superseded last fall (her daughter is very good), two head colonies among the top in strength so far this spring, and the other two are at least average. They had been confined over two and one half months.

As regards Mell Pritchard's item (page 400) on Allen Latham's May article, no comment is needed. I can only cry "habet"!

The American Honey Institute News Notes (page 391) tell of a good demand for honey. It also tells of another magazine carrying material furnished by the Institute. The two incidents are related—definitely. If beekeepers support the Institute, it will support them.

Middle River, Minnesota.

Just News



The Virginia State Beekeepers' Association will hold their annual summer picnic in Lynchburg, Virginia, at Miller Park on July 17. This will be a basket picnic, with fried chicken in abundance, as well as a watermelon feast. An interesting program is being planned, with some good talks on beekeeping, and a honey exhibit. So plan to come, bringing your nicest honey and your best story on producing and selling honey. Prizes will be given for the best honey exhibited.—Henry W. Weatherford, Sec.-Treas., Va. State Beekeepers' Association.

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The Annual Outing and Picnic of the Delaware, Montgomery, Philadelphia, and surrounding counties will be held on July 27 at one P. M., at the "Morris Arboretum" one of Philadelphia's most beautiful estates. The program will consist of speakers, games, contests and a motion picture "Realm of the Honey Bee". Every one is invited. Bring your box lunch and enjoy the day's outing with us.—Harry B. Pye, Sec. and Treas., Philadelphia Beekeepers' Association.

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Massachusetts beekeepers will go to college, Wednesday, July 24. The occasion will be Beekeepers' Day at Massachusetts State College's annual Farm and Home Week, and members of the faculty of the one-day beekeepers' meeting will include some of the best known authorities on apiculture in the Northeast. Heading the list of speakers will be E. F. Phillips, Professor of Apiculture at Cornell University who will speak on the wintering of bees. George Rea, extension specialist of apiculture at Cornell University, will talk on queen introduction and swarm control; Burton N. Gates, chief inspector of apiaries, Massachusetts Department of Agriculture, is listed to speak on "Honeybees and Their Relatives"; and L. R. Watson, beekeeper of Alfred University, Alfred, N. Y., will explain the breeding of queens for resistance to AFB and tell about recent developments in breeding of queens.

Our Illinois semi-annual convention will be held in Decatur, Ill., Fairview Park Pavilion, July 21, and is sponsored by the Piatt and Macon County Beekeepers' Associations. Talks by Carl E. Killion, B. W. DeBord, O. G. Rawson, Mrs. Harriett Grace, and Dr. V. G. Milum. This is the first meeting of its kind to be held here in the heart of the Illinois Corn and Soy Bean Belt. Come and enjoy the day with us.—Willard W. Smith, President, Piatt County Beekeepers.

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The Wisconsin Beekeepers' Association will hold three summer meetings this year as follows: July 23, Platteville, City Camp (in honor of Mr. N. E. France). July 24. Menomonee Falls—Honey Acres. (Walter Diehnelt Apiaries). July 26. Ladysmith. Memorial Park. The forenoon at each meeting will be devoted to inspection of a nearby apiary and honey extracting plant. Questions will be answered and equipment discussed. There will be a pot-luck luncheon during the noon hour, every family bringing a dish for the luncheon. The afternoon program will feature prominent speakers including Mrs. Harriett Grace, American Honey Institute; Mr. E. R. Root, Medina, Ohio; Dr. C. L. Farrar, Madison; E. L. Chambers, J. F. Long, and others. A Woman's Auxiliary program will be held in connection with each meeting.—H. J. Rahmlow, Secretary, Wisconsin Horticultural Society, Madison, Wis.

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Mr. Charles H. Weber, a retired honey and seed merchant and dealer in beekeepers' supplies, died at his home, in Westwood, Cincinnati, on Friday, May 17. Mr. Weber and his father operated a honey and seed business and sold bee supplies for The A. I. Root Company for more than 40 years, at 2165 Central Avenue, Cincinnati. The firm was known by his father's name, C. H. W. Weber and Company, and was sold to a St. Louis firm upon Mr. Weber's retirement in 1929. Mr. Weber was a keen, conscientious business man, who had dealings all over the United States,

and he will be greatly missed by his friends in the industry.

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"How to Succeed With Bees," is the title of the newly revised twelfth edition book for beginners by E. W. Atkins and K. Hawkins. So far as we can see the book, originally published in 1924, is brought up to date with a new set of illustrations.

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The Ohio Beekeepers' Summer Meeting is scheduled on Aug. 8-9 at Camden High School, Kipton, Ohio. The Lorain Co. Beekeepers' Asso. is cooperating with the State Asso. in working out an attractive program.

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The July meeting of the Middlesex County Beekeepers' Association will be held at 2 P. M. on July 27, at the residence of Mr. A. F. MacDougall, Boston Road, Westford, Mass. This will be a joint meeting with the Nashoba Fruit Growers' Association. Prof. Arthur G. Hildreth who is both beekeeper and fruit grower will speak on "The General Usefulness of Bees". Mrs. MacDougall will be in charge of the Ladies' Auxiliary supper featuring cold meats, fresh vegetable salads, honey bread, pickles, honey apple pies and ice cream. Please bring your plate, cup and silver.—A. M. Southwick, Pres.

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The Annual Washington State Beekeepers' picnic will be held August 3, at Lake Tipsoe. Bring your dinner and come prepared for a good time and entertainment throughout the day. Everyone invited,—Mrs. Eva Wixom, Sec., Washington State Beekeepers' Association.

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Mr. John W. Moir, C. G. M., Honorary Librarian of the Scottish Beekeepers' Association, died March 13 in Edinburgh, Scotland. As a young man, Mr. Moir went with his older brother to central Africa to establish trading posts with the natives on a basis of fair play. They thus crossed swords with the slave trade and were engaged for years in hostilities with the Arabs. On his return to Scotland, he took a keen interest in beekeeping, was awarded several medals and certificates for his skill and finally devoted his attention chiefly to the formation of a great beekeeping library. This he presented to the Association and it is now housed in the Edinburgh Public Library. He died at the age of ninety years, respected by all who knew him, after a life of great accomplishment. His title of Companion of the Order of St. Michael and St. George was conferred by the King during the coronation ceremonies in 1937, as a reward for his work in Africa. Mr. Moir cooperated actively by exchanges and in other ways with the Cornell Beekeeping Library for a period of years, both libraries being much benefitted by this work.—Dr. E. F. Phillips, Ithaca, N. Y.

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Part of the program of the Fifth Wabash Valley Round-Up of Illinois and Indiana Beekeepers to be held at Newport, Indiana, Saturday, September 7, will be devoted to contests. One of the most interesting will be the Question Bee, conducted like an old-fashioned spelling bee with the audience furnishing the questions. Judges for this contest will be Dr. V. G. Milum, Dr. C. L. Farrar and Prof. R. H. Kelty. Then there will be the hive nailing contest for women, a contest full of fun, mashed thumbs and bent nails. Another contest will be caging live bees from in front of hives with no aids and a penalty for each sting. A queen-finding contest will be held, as well as a drone race, which is a new one. In this contest the entrant finds a drone, outside of the hive, ties a thread around his abdomen, takes him to a certain point and releases him. The first drone that returns home is winner. There will also be guessing contests, baking contests and a honey show. There will be not only things to hear and do but many things to see. One of these will be the Newport 4-H Bee Club's modern queen yard in charge of Charles Robinson. In it you will see disease resistant stock. You will also see whole colonies of the same stock. There will also be two queen colonies in operation, all kinds of equipment, a 40-piece band, and there should be an intensive honey flow on, a flow so heavy some years that bees have been known to store in combs standing outside against their hives. We saw you wink, but just ask Stover, Fortune, or even Jerre Frazier.—L. R. Stewart.

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The fourth annual Madison County (Ind.) Beekeepers' Field Day will be held at the Edgewood schoolhouse on State Road 32, west of Anderson, Saturday, July 27. Commencing at 9 A. M. registration, etc., honey

(Continued on page 464)

Editorials

Truth is mighty and will prevail, even in bee culture.

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Honey Prospects and Prices Prospects are good in the middle West and in the East for a crop of honey. The flow from sage and orange has been disappointing in California. The yield has been fair in the southern states. It has been too dry in the West and too wet in the East. While clover is very abundant but little or no honey at this writing, June 20, has been stored from that source. Measured by the acreage or the square mile of clover, there will be a large crop; but sometimes abundant clover does not yield. The soil this year is moist and with suitable weather there should be a fair clover crop.

In the middle West and West the prospects for sweet clover and alfalfa are good.

Taking it all in all, it is impossible to determine at this time whether the crop will be light or heavy.

From best information available and from Government market reports last year's stocks of honey except from the extreme Southwest are either cleaned up or are low.

The Great War and Prices

It is the general belief that no matter which side wins in this great World conflict there will be a food shortage and possibly famine over most of Europe. Will she come to America for food and if so will she have the money to pay for it? Will it mean a rise in prices on all foods including honey?

We don't dare make even a guess, much less a recommendation to hold your crop. One man's guess is as good as another as to what will happen in American or Europe.

• • •

The Wax Moth We draw special attention to the splendid article in this issue, page 424, on wax moths, by V. G. Milum. Moths are a nuisance that take a terrific toll of combs annually. Readers wishing still further information may wish to send to Superintendent of Documents, Washington, D. C., for Circular 386, entitled "The Wax Moth and Its Control", by Warren Whitcomb of Baton Rouge. The price of the circular is 5c.

Jump on Him. Or is He Right? O. B. Server (that's his **Nom de plume**) in the Beekeepers' Item for June, makes this statement:

> Here is where we stick out our neck, and that is one of the values of writing under a **nom de plume.** What should honey sell for? This country will never get far in the sale of honey, until the maximum price paid for good honey wholesale in 60-lb. cans in car lots is 5c per pound. Now jump on us if you wish.

And then he adds:

> Most of us spend time cussing the buyer and overlook the cost of distribution sales and advertising. If we spent some of this energy in trying to reduce our cost of production we could sell our honey for 5c a pound at a profit.

Mr. Fred W. Muth, of Cincinnati, has for some time been saying much the same thing. Is he right?

On the other side of the question are the price cutters both, retail and wholesale just now.

Gleanings refrains from taking sides. Our columns are open for their discussion.

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Intensive vs. Extensive Beekeeping During the past decade there has been a tendency towards expansion in commercial beekeeping. More and larger apiaries have been the objective.

Beekeeping is a seasonal business. A considerable amount of labor must be performed in a comparatively short period of time, especially in the North where the season is intensive.

To secure the maximum yield of surplus honey from each colony, apiaries must receive the proper attention at the proper time. There is a limit to the amount of colonies one person can manage efficiently. A manager who is obliged to detail bee work to help that is comparatively inexperienced is confronted with the problem of inefficiency.

A manager of commercial apiaries should not attempt to operate more colonies than he can supervise efficiently. We have found from experience that it is necessary to give rather close supervision to a series of out-apiaries in order to know what is actually going on in each hive.

Dr. C. L. Farrar, head of the Government field station at Madison, Wisc., told us at a recent international meeting that one way to reduce

production costs is to raise the per colony average production of surplus honey.

And so, it should not be a question of how many apiaries or hives of bees we can own or manage but rather the highest possible per colony average of surplus honey we can secure.

There is a law in business that refers to diminishing returns on over-expansion.

Intensive rather than extensive beekeeping should help us realize a wider margin of profit on our investment.

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Armies Travel on their Stomachs Our readers will be interested to learn that the American Honey Institute has sent recipes and information on honey to various schools for bakers and cooks for the U. S. Army. Honey is a carbohydrate, a food that produces quick energy which is needed by men in the Army and Navy. It requires no great stretch of imagination to realize what could happen to the demand for honey if it were used generally in Army and Navy commissaries.

See page 446, this issue, for further details on this and other contacts that are being made by the Institute in the interests of honey. May we all continue to give the American Honey Institute our moral and financial support, because it is creating **greater consumer interest for honey,** which, by the way, is the very foundation of our industry.

• • •

Boosting Our Industry Are there any ways by which beekeepers, and those affiliated in any way with beekeeping can boost our industry?

Yes. We can become more familiar with the virtues of honey and talk it to our friends, individually, or at clubs and lodges. We can learn more about bees, how honey is produced, and enlighten the public on these matters. Some can write articles on bees, honey, and pollination for local papers. Editors are interested in securing such items. Be sure, however, that the articles are correctly written—based on facts, not fancies. And last, but not least, we can set a good example by using honey regularly on the table and in baked goods.

If each person connected with the beekeeping industry would make an honest effort to become more familiar with honey and its various uses, the value of bees as pollinators, and the technique of producing and marketing honey, and really become enthused, something would happen to our industry, because genuine enthusiasm is contagious. The public would then know more about our industry and the demand for honey would receive a real stimulus.

All of us can and should help to boost our industry.

• • •

Upper Entrances for Summer We have been going over the back volumes of the bee journals — particularly "Bees and Honey", then edited by Geo. W. York. While top or upper entrances of limited size have been recommended as a means for the escape of moisture during the winter, there are not a few reports showing their value during the time honey is being stored. It is claimed that they (the top entrances), help to reduce swarming by allowing excessive heat in the top of the brood nest to escape. It is further claimed that the top entrance hives yielded more honey. In "Bees and Honey", January, 1929, there is a report on top entrances by Provincial Apiarist W. J. Sheppard, of the Department of Agriculture of British Columbia for 1928, giving a set of tables covering the reports of some 20 different apiaries showing that "in most cases the top entrance hives yielded more surplus honey than check colonies with bottom entrances".

This coming as it does from the Department of Agriculture is significant. Just **why** this should be so is not clear unless it is because the escape of heat in the brood nest reduces swarming. It is well known that a colony that does not swarm will produce more honey.

• • •

United States Census It is our guess, and only a guess, that the United States Census figures on the number of colonies and the amount of honey produced in the United States will fall far short of the actual figure in either case.

We have asked many beekeepers whether they have been questioned by the census takers as to whether they kept bees, and if so, how many colonies and the aggregate colony production. So far, we have **not been able to find a single beekeeper** who

has been asked these questions, and some of them are very large producers.

Another factor which must be considered is that often a large producer does not like to tell the number of colonies of bees he is keeping, or what his aggregate crop amounted to, and will put the figures very low. On the other hand, the figures secured by Harold J. Clay of the Bureau of Agricultural Economics will be much more accurate, because his figures will be compiled from reports given by State Bee Inspectors and Extension men who are able to give a pretty close estimate of the number of colonies and the crop secured by actual count.

This statement is made before any Census figures are available, but if figures on the number of colonies and crop secured are below former reports, we shall not be surprised, although Census figures for this year are supposed to be based on a wider scope of inquiry than those of former years.

• • •

The Origin of the Upper Entrance Top or upper entrance, is an old idea that came from Europe but it has been only in comparatively recent times that it got a foothold in this country.

Perhaps A. W. Finlay, Inspector of Apiaries in British Columbia was the first to make it public. (See Gleanings for December, 1923.)

The late Arthur C. Miller of Providence, R. I., was still another to make it public in this country. In the bee journal, "Bees and Honey", published by Geo. W. York in June, 1926, we find it again. But Miller claims he got the idea from E. W. Brown of Willow Springs, Illinois, in a series of letters Brown wrote him as early as 1921.

It appears that Mr. Brown who had been testing out top entrances had been trying to get some leading beekeepers to try it out also, but there were only two who began to see its merits and one was A. W. Finlay. Others took hold of it in the meantime, notably W. J. Sheppard, Provincial Apiarist for British Columbia.

The idea began to be exploited in real earnest in all the bee journals of this country, in 1929, and from then on to the present.

It received a black eye here at the start because some made the top entrance too large, and chilled the cluster with disastrous results.

It is only fair to say that the late Geo. W. York, former editor of the American Bee Journal, gave more space to the discussion of the subject than any of his contemporaries.

History repeats itself. Really meritorious ideas often meet serious opposition at first. Hoffman frames, as the writer well knows, met all kinds of opposition from the leaders. Breeding in two full-sized Langstroth hive bodies is another that came near dying at the start. Supering on top is now going through its first stages of opposition, and so history has been repeating itself in all lines of improvement other than beekeeping.

• • •

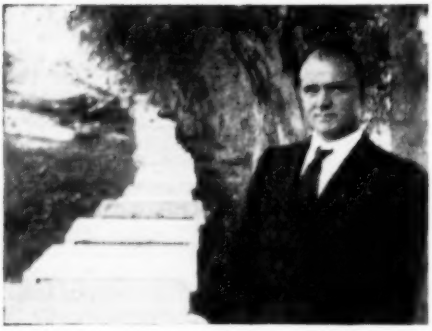
Foulbrood Being Conquered The practice of burning all infected material including bees in cases of AFB, on the part of all the bee inspectors of the country is really beginning to yield results while shaking and saving the bees, on the contrary, was not making a clean-up. The cure was only temporary. Burning as was shown on page 370, of our last issue is getting rid of colonies susceptible to AFB.

The work of the U. S. Bureau of Entomology, in collaboration with the various states, is showing that some strains show a high resistance and that conversely other strains show a very low one. The last-named are being slowly eliminated by the universal practice of burning and a territory once made clean stays so.

The inspectors over the country are finding that complete burning and scorching out of hives is reducing AFB to a minimum. Witness this from Inspector Heard of Texas. On May 9, he writes, "Since Jan. 31, we have inspected 7663 colonies and burned only 12 of that number". The year before he had burned many more and next year the territory will remain clean.

Inspector Crockett of Arizona says that since he adopted burning, his state is practically clean. Inspector Foster of Florida and Inspector Atchison of Alabama tell practically the same story. After a 10,000-mile trip over the country—East, South and West, we hear that our old enemy is gradually being conquered—not that we shall ever get rid of it entirely because the ignorant and careless beekeepers will always be with us.

XUM



Beekeeping in the

In the May and June issues, I have shown the irrigation scheme of supplying water over the former desert land of Southern California and of Arizona. The conditions of soil and climate are much the same in both. The land is productive, but only when it can have water. The vicinity of Phoenix, Arizona, and the surrounding territory, is perhaps further developed than elsewhere in the state.

The same kind of crops, the same kind of beekeeping and the same kind of honey is produced both in the Imperial and Salt River Valleys. It is awfully hot in summer and dry the year around. Tools, hives, and appliances can be left out doors the year around as there is seldom any rain.

As explained also in the May and June issues the houses can be made very comfortable during the hottest part of the weather by simple air-cooling devices. Moist air is forced by a small electric fan through the rooms, and in this very dry climate the temperature is brought down to a point where one can sleep or live in comfort. Much of the field work is done at night with tractors that carry automobile lights. The night air is not bad, so that one can eat, sleep, and live in comparative comfort, day or night during the hottest part of summer. If one must get into cooler air the mountains are not far distant.

The Leaders in Arizona Beekeeping

While in Phoenix I could see only one or two beekeepers as my stay was limited to two days.

I called on W. A. Crockett, State Bee Inspector for Arizona. He has of his own about 800 colonies. It was he who drove me all over the vicinity of Phoenix, Arizona, and who enabled me to get the pictures shown here and in the last issue.

He is shown in the left-hand column, with one of his yards of bees under a row of eucalyptus trees for shade. Next below is a frame of brood taken from one of his colonies in late February. Below that is another yard under the trellis' shade so common in this country.

Mr. Crockett as bee inspector has done his work so well that the percentage of AFB found among the

Hottest Climate

By E. R. Root

colonies inspected is only a fraction of one per cent, the lowest that I have seen from any state. He attributes that to the policy of burning all infected material and to the fact that all bees, all used equipment, and all honey in containers ready for market must bear a certificate of inspection from the state of origin, showing freedom from disease before it can land in Arizona.

The Loviett Honey Co.

The opposite column shows Mrs. M. G. Loviett and her foreman whose name my notes do not reveal. Mrs. Loviett has long been known as the most extensive beekeeper of her state. She is less active now as her foreman takes her bees and equipment and runs them on shares. The second picture down shows her consulting with her foreman in front of a load of honey in cans to go out. The following pictures show her equipment all out in the open including a portable extracting outfit.

Mrs. Loviett has long been known as the honey merchant for the Salt River Valley. The big jobbers and buyers of Los Angeles always speak of her in the highest terms.

Retrospect

Twenty years ago this Salt River Valley was getting well started in new irrigation projects. Alfalfa was coming to be one of the main crops and along with it beekeeping was making rapid strides. It was soon discovered that long staple cotton for automobile tires was a much more profitable crop. World War conditions made the cotton worth a dollar a pound. Alfalfa was plowed under and long staple cotton put in its place. While cotton is a honey plant it was by no means as good a yielder as alfalfa.

Nothing daunted, Mrs. Loviett put her bees out on the desert where there was the desert plant, Indian wheat. It furnishes both pollen and nectar just right to build up a colony but not enough to furnish surplus. Then there was wild hollyhocks and willow. Her bees built up so strong that you could scrape pounds of them off the fronts of the hives. These she shipped to California. Since then alfalfa has come back and both cotton and alfalfa are now grown.

American Honey Institute News Notes

Armies still travel on their stomachs and the Institute has sent recipes and information on honey to the various schools for bakers and cooks in the Army as well as to the Subsistence Research Laboratory. Honey is being stocked quite universally in Army Commissaries and may be used by troops in their organization dining halls. We hope that it will soon be made a component of the daily ration.

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The Institute is working with a number of candy manufacturers and bakers. One of the largest candy corporations in America writes "Ofttimes honey is offered us by beekeepers in small quantities and as we manufacture one candy bar throughout the entire year we cannot change our formula in order to use up small quantities of honey of different flavors, etc. This has been one of our greatest drawbacks".

• • •

A physician who served overseas during the World War told us that he always put a candy bar in his inside coat pocket to have when his energy was getting low. The manufacturer of this bar is now planning to use **domestic honey in the bar.**

• • •

This is the "Canning with Honey Season". Will you help us to distribute the leaflet "Use Honey for Canning and Preserving"? We shall help you by giving you the leaflets (while they last) at $2.50 per one thousand.

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This is also the Salad and Refreshing Drink Season. A dietitian in a hospital remarked that one cannot make a good fruit salad without honey.

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You will want to distribute a number of the Honey Cooky leaflets and of course the new leaflet that fits the cover of a five-pound pail. Eighteen thousand of the latter were ordered in one week. This leaflet should bring repeat business for honey.

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Circular 554 just published by the United States Department of Agriculture contains a summary of reports from beekeepers which lists the various honey plants in each section of the country. "The circular includes a seasonal chart for each state indicating the time during which some of the important honey plants are supplying the bees."

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The Institute is scheduled for three broadcasts during July and August. One broadcast will be on "Honey in Canning and Preserving".

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Will those who pack honey in glass pails or bottles who are interested in a leaflet of recipes to fit the cover, please write to us? We have designed one similar to the one that fits in the cover of a five pound tin pail but it is smaller in size and has more pages. This leaflet can be fastened securely to the top of the cover with a strip of cellulose tape or with seals which the Institute will furnish.

• • •

We have a new leaflet for your baker. It is entitled "Holiday Honey Cakes" by W. E. Broeg. Many bakers make up their holiday dough during August in order to give the mixture a chance to ripen during the months that follow. Honey in baked goods should make "dough" for the baker.

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In most nationally known food products we always find a recipe leaflet. The leaflet found in Pillsbury's Best Flour contains a recipe for **"Peach Honey Cobbler".**

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A class in Foods in one of our universities did some experimental work on honey for the Institute. Some commercial honey was purchased. The acidity was found to be 2.4. The amount of soda needed to neutralize this acidity was found to be one-fifth teaspoon per cup of honey. This quantity was used as equivalent in leavening power to one teaspoon of baking powder. Tartrate baking powder was used and a sufficient quantity was added to provide leavening, on the basis of one and one-half teaspoons of baking powder per cup of flour.

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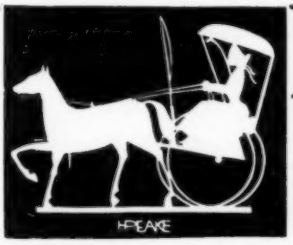
Often the strong taste of soda is disguised by the large amount of spice used in a recipe. Where chocolate is included as one of the ingredients of a recipe add one-twelfth teaspoon of soda for each square of chocolate used.

Spinster



Jane Says:

We've been in quite a dither the last few days, getting our newly-acquired package-bees installed in their new homes. They came a long distance some from Mississippi, some from Alabama, and the funniest thing of all, there was a stow-away. One lone bee stole a ride, refusing to be separated from her fellow-workers. She hung tight to the screen all the way, like a transient riding the rods.

Boy is a very proud boy, as he strolls through his small apiary of twenty hives, and are those bees busy! They have cleaned house as sedulously as the veriest ultra-particular housewife. All debris has been carried outside, and now, once settled, they are quiet, and their low hum tells of utter content.

We gave them some comb foundation, and several combs drawn out. Some of these combs had been stored for several years, unused, but the bees are accepting them, as they have accepted every queen.

A few minutes ago I walked down the aisle between the hives. It was after 8 P. M., yet many bees were still winging their way home, heavily laden with pollen and nectar.

These busy little newcomers seem to know instinctively just where to find nectar, though this is a strange land, where nectar-sources differ greatly from those in their southern home. Is their sense of smell that keen, or is it simply instinct that guides them?

Boy is keeping a record of his various hives, and it surely makes interesting reading.

Hive No. 1, a maverick swarm, was found in a tree in a swamp, in November, 1938. It had no honey stored for winter. Boy purchased a super of honey from a neighboring beekeeper, to winter them, this costing him $3.00. Next season, 1939, he sold about 160 lbs. of honey in the comb, from this same run-away tree swarm, and surely this paid for all the labor, hunting, and lugging it home.

In a recent write-up I told of the wonderful new queen we had, and of how she was laying eggs all over the place. Well, it seems she over-did herself. She has completely disappeared, though how, why, or where, we can only guess. Boy hazards the opinion that there was too much brood for the small colony to cover, so perhaps they made away with her purposely. Could she possibly have played hookey, gone out for an airing, and fallen a prey to kingbirds? Or are we sure that queens once mated and laying, never leave the hive unless with the swarm? Kingbirds do hang about the beeyard, darting and swooping like Nazi dive-bombers, among the flying bees. We ourselves, are quite up in the air, in this matter. But the result is plain. That colony has sadly degenerated. It now has a drone-laying worker for a queen, to our disgust. Though revolution and violence often leads to better things, in real life, it has signally failed here. Boy has given them a frame of brood with a well-developed queen-cell, to strengthen their morale, and we are all agog to know just what those bees will do about this newly-acquired queen. She has emerged, but that is all we know about it as yet.

I have lauded these gallant little workers to the skies, have preached that humans emulate them, and now I find that they do go wrong once in a while.

And before I forget it, we tried the plan Mr. Deyell told about, in putting them in hives. We put one above the other, and poured warm syrup through. It worked like magic. Their angry buzzing at being disturbed soon became a contented hum.

How thankful we are to have a roof-tree of our own, and bees humming and zooming all about. An idyllic pastoral. Though rains keep us from getting in our grain, though our gardens become flooded, though our pockets be well-nigh empty, let us give thanks. Think of the misery and sorrow in Europe's war-torn countries, and know we have no cause whatever for discouragement and fault-finding, here in the Americas.—Spinster Jane.

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From North, East, West and South

NORTHERN CALIFORNIA, June 2.

Weather: The usual weather of this part of California is sunshine from the beginning to the last of May as well as in June. This May tried to be different; it commenced with a shower and ended with a shower. Decoration Day was cloudy and broke the record of 30 years, by giving us nearly a half inch of warm rain. Fine on flowers, but not exactly what the farmer wanted on account of its happening in the midst of hay cutting.

Honey crop was not affected by the light rain, for here in the eucalyptus district, the honey was already in the can. The crop of eucalyptus honey was very satisfactory this year. Some beekeepers who moved into the sage and orange districts are making reports of reasonable success. The usual number of complaints are coming in from beekeepers who failed to have their bees ready for the honey flow.

Honey Market: The honey market is little changed. Beekeepers seem less anxious to rush their honey on the market than in former years. We have heard of no fixed prices for orange honey although several of our leading producers have their crops in new cans and cases, and are waiting for better prices. The effort they have made to produce a better quality stored in new cans deserves a better price than is paid to careless, slipshod producers who finish by putting their honey in second hand cans.

Miscellaneous: The Golden Gate Exposition on Treasure Island has again opened its gate to the world and from the opening the attendance has been all the management could have expected, and, best of all, the prospect of greatly increased summer travel is most encouraging. The railroads are carrying a greater number of tourists and the out-of-state automobiles show that the summer travel from that source will be exceptionally heavy.

The California State Beekeepers' Association has a fine exhibit of bees and honey at the Fair and the two attendants in charge are busy all day handing out literature and urging the use of honey in the home.

Beekeepers everywhere, and especially visitors from the East who attended our national convention at Sacramento, will be shocked to hear of the death of Mrs. Fred Hanson of San Diego. Mrs. Hanson made many friends at the convention which added to her popularity among the beekeepers at home. Mr. Hanson is senior inspector in San Diego County. Mr. Hanson and the son has the sympathy of many friends.—Cary W. Hartman, Oakland, Calif.

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SOUTHERN CALIFORNIA, June 1.

Weather: May, the banner month for honey, in Southern California, did not come up to expectations. We always have a lot of beekeepers who become overly optimistic as soon as we have some nice winter rains. This season is no exception. We heard reports of "going to make a case", from the orange when the prospects were good during the first week of the flow. BUT, when it is in the cans we not only fail to find the fellow with a case to the colony but fail to find the fellow with over a can, 60 pounds, and many not over 30 pounds. This reporting of big prospects certainly hurts the chances of the beekeeper, who does all the hard work of producing a crop, of getting a living price for his product.

Honey Crop: The orange I have already mentioned. The black sage and the purple sage—our two great yielders of early white honey—have been a disappointment in every case where we have contacted the beekeeper who is located on these ranges. We will venture a guess that the average will not go over fifteen pounds per colony in most cases. On our ranges the flow from black sage is over for 1940 and while we may get a little from the white sage and wild buckwheat many beekeepers say they will be satisfied with a fill-up. Especially is this true with the fellow who moved to the orange and

extracted close before moving back to the hills.

Market: Was glad to see what Bro. Hartman said about prices for orange in June Gleanings. At those prices the beekeeper would have some chance to live and get a new suit of clothes. Buyers are not coming around with any encouraging offers.

Miscellaneous: As we leave our home here in Corona at an elevation of 700 feet and drive to our cabin at an elevation of 5500 feet, a distance of 70 miles, one cannot but observe the great changes that take place in the flora that line the highway.

After leaving the orange groves we pass through miles of wild buckwheat and white sage ranges interspersed with alfilerae, black sage, deer weed (wild alfalfa), sumac, and myriads of minor shrubs and wild flowers. Then as we climb the mountain, the sage and wild buckwheat gradually give way to the red shank and the manzanita and wild flowers.

As the reports come in it is pretty well agreed that we are not to get a honey crop in Southern California this year. With a shortage of spring rain the country is showing the lack of moisture and the ground is drying up fast. Many of the beekeepers who moved to the orange have removed the supers of orange honey and stored them until they have their colonies moved back onto the summer ranges when they will extract the orange honey at their pleasure.

There is a wide variance in the methods of manipulation and management of colonies by different beekeepers here, (or should we say in different localities.) up to, during, and immediately after the orange honey flow. In two districts we could mention queen excluders are used very extensively while in our section we cannot point to one who uses them. In those localities where the excluders are used many beekeepers move to the orange in single-story hives while around here the custom of moving in two stories is almost universal. Where excluders are used many beekeepers extract very closely trusting that the bees will gather enough to fill for winter at least, while around here it is the custom to leave the colony in two stories and heavy with stores at all times. These subjects that came up for discussion at many of our meetings in the earlier days but are seldom heard in our gatherings any more.—L. L. Andrews, Corona, Calif.

BRITISH COLUMBIA, May 30.

Weather: The condition of colonies this spring seems to vary very much according to locality. Those in the vicinity of commercial orchards built up well and in some cases gained a fair surplus, but away from the orchards the usual sources of early nectar seemed to be an almost complete failure and colonies have been close to starvation. This applies to colonies wintered either with shallow or deep food chamber as well as to colonies fed 30 to 40 pounds of half-and-half syrup early in April.

A visit to some of the yards on May 24 showed many dead drones in front of hives, both drone brood and mature drones.

Probably due to the cool weather packages have not built up to as much strength as usual and this seems to have been a season when three-pound packages have quite an advantage over the two-pound.

The season is ahead of normal and the first of the alfalfa bloom and that of the yellow sweet clover is already in evidence, at least ten days in advance of the average year.

Crop Prospects for 1940 are good at present if we get sufficient moisture here in the Interior and the folks at the Coast get good weather.

Prices have stiffened a little and beekeepers generally are anxiously awaiting the War Budget of the Parliament now in session because undoubtedly increased taxation will affect us all.

Miscellaneous: The importation of package bees seems to have been about as usual and mostly in replacement of winter and other losses. On May 18th we received a frantic call from the Express agent in Kelowna asking how long package bees could exist on the food shipped with them. He had been holding for three days a shipment of 50 two-pound packages and had been unable to get in touch with the consignee. In spite of having been shipped eight days previously the bees were in good condition.

Supersedure of queens with packages is seldom a problem with us and this spring out of over 80 packages hived no case of supersedure has yet been noticed, with no drone layers and only one queen lost in introduction. Thirty of the packages were in lots of five from six different shippers.—G. F. Pearcey, Kelowna, B. C.

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SASKATCHEWAN. June 4.

Weather: The winter in Saskatchewan was much milder than usual with less than average snowfall. This was hard on outdoor-wintered colonies and reports indicated that of the colonies wintered outdoors a total of 51% were lost. Fortunately only a small proportion of bees in Saskatchewan are wintered outside. Of the colonies wintered in cellars, the loss was higher than usual, being 17.3%

Market: Wholesale markets have been clear of Saskatchewan honey since January. There is plenty of honey still being retailed in the stores, but no carlots available anywhere in the province. With the limited supply of honey across Canada, all stocks should be cleared before the new crop is available, which should have a strengthening effect on prices in 1940.

Conditions: Clover is just now beginning to show through the ground and from all indications, appears to have wintered well. It is too early yet to estimate the amount of clover which will be available, but it is expected there will be no marked shortage of pasture this year.

Rains recently received have put the ground in good condition, and we now have sufficient moisture until well on toward the end of June.

Miscellaneous: Package shippers have experienced a very difficult season, and are feeling very sorry for themselves at the present time. However, they must remember that in a season when it is not possible to raise bees under the best conditions in the South, that the producer in the north receiving the bees raised under these unfavorable conditions, must also suffer. Packages arrived in this province during the last few weeks, and in most cases were apparently in perfect condition, with very few dead bees. However, it soon became apparent that something was radically wrong. Queens failed to lay in numerous cases. In other cases they did not lay as freely as they should have, and on second examination of the colonies, numerous supersedures were noticed and heavy queen replacements were required. This was made extremely difficult due to the fact that package shippers were very short of queens themselves, and were not prepared to furnish queens to northern producers who needed them at that time, preferring to save these queens to put into packages to assist them in getting out their orders.

Two years ago I stated that package shippers must undertake to properly service the package which they send to the North and the lack of this service was very apparent this season, as many producers lost hundreds of dollars' worth of bees through their inability to secure queens promptly.

Another complaint which purchasers of packages have to make this year, is that shippers in the South did not notify them of the fact that their packages would be delayed, and this caused considerable trouble in many instances. The least a package shipper can do, is to advise his purchaser when he may expect his packages, if they are not to be shipped on the day they were ordered for shipment.

Recently steps have been taken to form a Canadian Beekeepers' Federation, which would represent all the bee interests across Canada. Organizations in this province are strongly supporting this move as they believe it will materially assist producers to advertise and dispose of their product and will give them a means of unitedly voicing their opinions on questions which affect their interests.—R. M. Pugh, Regina, Sask.

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WYOMING, June 7.

Weather: Most all parts of our state received several good wet snows last winter that broke the long drouth and in recent weeks normal amounts of rain, with two good showers so far this month. Cloudy, cool days prevented bees from taking full advantage of the dandelion flow. Prospects for the main flow are as good or perhaps better than last year at this time.

Prospects: It remains to be seen whether the recent precipitation can entirely overcome the effects of the long drouth extending from midsummer until early spring. But clover plants have stretched up with the spring rains and look promising, though thinner in number. Yellow sweet clover is coming into bloom now.

Market: Local sales are fair, with considerable variance in prices, from 35c per 5-lb. pail in some chain stores to 53c where the price-cutter

has not been so active. A letter from one wax buyer indicates a drop in the price of wax in the near future. Carry-over of honey, if any, will be small and should not be a factor in determining prices of the new crop.

Miscellaneous: The April issue of Gleanings contained an article on the subject of hired help by Charley Moosman of Valentine, Nebraska. This writer seems to think that by some magic the honey producer can and should pay more than other phases of agriculture and terms going wages as "flunky wages" indicating the payment of good wages would be a safeguard against carelessness. Since that article was written a very serious wreck occurred on a class 1 railroad in New York, resulting in loss of life and property damage that will total in the millions, yet no one acquainted with railroad wage scales would consider them unfair in the least. Having had 20 years in railroad service I can say that labor's aristocracy is on the rail lines of the U. S. and most of the railroads of the country are going broke trying to meet their pay rolls and taxes. Disobedience to speed limits was plainly the cause of the New York wreck and cannot be overcome by any wage that might be paid. We seem to be living in a definite age of chaos, unrest, and lack of appreciation, resulting in strikes and violence right where the best wages are paid for an eight-hour day. The help problem is a hard one in all lines of endeavor and I believe the definite cause is lack of Christianity.

I succeeded in getting an article on the food and medicinal value of honey in the July issue of "HEALTH" published in California, but among the portions eliminated by the Edior's blue pencil was a quotation from "Honey and Health" of Dr. Banting's statement that in the heating and re-crystallization of refined sugar something takes place that leaves it a dangerous food stuff. I also made other inquiry to see if some Government agency could not establish the truth or error in this and other claims made for honey, but it seems the sugar business is too large, or else the bee industry too small. Certainly the health of the Nation should demand the necessary research and the publishing of the findings on the matter of all foods and drugs regardless of mercenary involvements.—Earl C. Reed, Ranchester, Wyo.

KANSAS, June 3.

Weather: During May, nearly normal rainfall occurred in the eastern part of the state and thus brought with it cool weather, and the plant growing conditions have been extremely favorable. Even in the western half of the state, rains have come which enabled the farmers to plan for summer crops. Dust storms have been at a minimum.

Condition of Bees: Following rather heavy winter losses in southeastern Kansas, which averaged 20 per cent, and was incidentally the highest winter loss in the state, colonies have been developing slowly due to the combination of a weakened condition of the bees and cool weather. Winter losses in northeastern Kansas averaged only 10 per cent. Colonies which had hive protection during the spring, developed normally and rapidly, but as soon as the protection was removed, population development was slowed up considerably.

Crop Prospects: Colonies, if well fed during the spring, should build up in sufficient strength to be ready the latter part of this month to gather copious amounts of nectar from white sweet clover. The honey crop prospects are the best in eastern Kansas since 1931.

Market: At the present time there is no new crop honey on the market, and the 1939 crop has all been sold except in one or two instances. This honey probably will be moved out before any appreciable amount of new crop honey is ready for the market.

Miscellaneous: The annual meeting of the Southeast Kansas Beekeepers' Association will be held July 21, presumably on the E. L. Yount farm a few miles north of Chanute on U. S. Highway 59.

The Kansas State Fair Board is making efforts to produce a better Fair at Hutchinson during the third week in September (15-21). With the present crop prospects, exhibitors in the Department of Bees and Honey at this Fair should be able to make an extensive display.

Demands for apiary inspection this spring have been rather heavy and, with limited facilities, the work may not be accomplished as desired by the beekeepers. Where the inspection

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work has been carried on for from one to three years successively in the same area, AFB has been reduced to a minimum. If beekeepers want the apiary inspection work expanded in the future, more financial support will have to be forthcoming for this work by the Kansas Entomological Commission. With beekeeping conditions probably improving, demands for apiary inspection work undoubtedly will increase and, without proper support, some areas will have to be forcibly neglected.—R. L. Parker, Manhattan, Kans.

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LOUISIANA, June 1.

Weather: Ideal weather conditions followed our cold winter and honey plants were hurried along to recovery by bright sunshine with just about enough rainy days to supply ample moisture. There have been an unusual number of wind storms—some of cyclonic proportions—this spring, and some bees suffered in common with the destruction wrought on buildings, fences, and forests. Just at this time we are having a dry spell and rain is badly needed.

Crop Prospects are normal. With most bees in fine shape, good gains were recorded in March, April, and the beginning of May. Just at this time the flow is slow owing to dry weather—but scale hives still show slight gains. Under good management, extracting is proceeding rapidly so as to give super room for the usual summer flows. Demand for honey is still above that which is usual in this territory.

Miscellaneous: The things which beekeepers worry about are often of little consequence—to other people—sometimes of no moment to themselves. The elaborate details of apiary management which are periodically outlined at our big meetings are seldom followed by those in attendance and never by the large majority of beemen who do not attend meetings. They are rhetorical rhapsodies on good management, nice to listeners who are pleased to place themselves among the intelligencia but we ALL have better systems of our own which suit our localities and convenience. From a scientific viewpoint most of us are wrong, but we will never convince a beekeeper of this fact as long as his effort brings a profit; satisfactory returns spell r-i-g-h-t.

Price Cutters

One of our pet admonitions concerns the strict segregation of each color or flower of honey; then we are told that there are thousands of honey flavors—one from each variety of flower—all of which convinces the little producer that his best line of procedure is to blend everything and have one standard product. He usually wins. Good or bad, his blend sets a local standard and his consumers know just what they will get in the next jar. Capping melter honey goes into the conglomerate—and not a customer protest. He may be just a "pain in the neck" to his competitors but he is usually the most successful beekeeper in his neighborhood, criticized by some and envied by all. However, there is one great point in his favor—he is not a price-cutter or a market wrecker. In many cases he sets the price at a profitable figure and does not cut to meet competition.

The Real Marketing Trouble

The real marketing troubles come from bigger sources. The little man who sacrifices a ton or two of honey at prices below the cost of production cannot be blamed as he is a victim of circumstances and his exploitation by a grasping buyer simply furnishes a lever to depress offerings made to the next victim. Then the fun begins —the big fellows cut under each other until even they have to "squeal". In the final analysis we find that the worst offender is that man who is managing the sales for a large number of producers—himself, without financial interest or actual liability for any loss which may follow his operations. His idea seems to be that an added cent to the producers' income should be satisfactory—and the real wholesale operator is faced by competition which is far more ruthless than that which legitimate competitors could give. We believe in cooperatives but not in uncontrolled executives; a board of producer members should scan every transaction, and if this board approves any price-cutting activities—the very thing which they organized to prevent or overcome—then failure is assured and they are the real cause of the failure. When they allow the "hired salesman" to assume full control—they seal their own doom.—Geo. W. Bohne, Luling, La.

TEXAS, June 1.

Weather: May has been a month of watchful waiting and ends with the beekeepers much disappointed. Rains which fell over much of Texas the first part of the month promised a honey flow of some kind. These rains were of short duration and fell on soil already dry from a three-year period of drought. As a result there is no honey crop up to date. A few have reported a light honey flow and one or two have been able to take off some honey but as a general statement there is no honey crop to date in Texas. There is still time for a honey crop from mesquite, and cotton can be depended upon in north-central Texas. Beekeepers are hoping the light honey flows will continue.

Miscellaneous: Only a very few people know that the number of plants from which bees secure the raw material from which honey is made is very small. Every beekeeper has experienced difficulty in answering the questions of well-meaning persons who meet them with the expression that the bees must be storing much honey as there are so many flowers in bloom. Observations this spring indicate that the number of flowers has nothing whatever to do with the honey flow. For over a month this section of Texas was a veritable flower garden and the bees were very busy working over and around these flowers in a vain attempt to secure the nectar that they needed so much in order to build up a full spring field force to store honey for the remainder of the year.

It seems impossible to casual observers that there are flowers that do not contain nectar and from which bees cannot collect. This belief is quite common not only among the general public but among beekeepers. It is with a great deal of satisfaction that we read Circular No. 554, U. S. D. A. by Dr. E. Oertel, "Honey and Pollen Plants of the United States". It will repay anyone to secure a copy of this circular. Dr. Oertel who is a most careful investigator shows definitely that only a few plants are present in sufficient quantities and yield nectar in a manner which the bees can collect to be of service to the beekeeper.—H. B. Parks, San Antonio, Texas.

GEORGIA, May 30.

Weather: The past winter was severe, from about December 15 until April 1. This set spring back 30 days, and Georgia has never experienced such a winter or late cold spring. The last seasonable rain fell about March 20. We had a few light showers on May 27 and 28.

Condition of Bees: Severe winter left bees in poor condition. Starvation and general spring dwindling brought a heavy toll, about 20%, while the usual loss is not more than 5%. Today, bees are in normal condition. When cold weather did let up, bees built up rapidly until they reached the swarming peak, then swarming occurred in spite of all that could be done.

The Honey Flow: Spring ty ty gave the first light yield in several years, blooming one month later than normally, right along with huckleberry, Indian currant, and other minor early honey plants. Generally the honey flow from these sources is over two weeks before the main honey flow comes on from black-gum, white tupelo-gum, gallberry and white holly, but this time the flows actually lapped over and the beekeepers had no chance to remove the inferior early honey, to keep best grades to themselves. This gave a mix-up of honey, such as we never had before.

Honey Market: The market opened up this time with no old or carried-over honey in the hands of the beekeepers. In fact, all the commercial beekeepers had orders they could not fill, from good customers. These early orders opened up the Southern honey market in a great way and at the same old price, both comb and extracted sold for last year. As fast as the new crop can be removed, graded, and packed it is moving on the market.

Miscellaneous: The package and queen shippers have had a great harvest of orders but some difficulty was experienced in getting bees quick enough this backward season to fill early orders. Beekeepers are losing hope for better prices and speeded up production in order to take care of the shortage caused by low prices. This is still realized by all as their salvation.—J. J. Wilder, Waycross, Ga.

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PENNSYLVANIA, June 2.

Weather: This spring has been cold and wet, including today which is June 2. Many colonies of bees were lost during April, the month when they are normally building up and getting ready to swarm.

Prospects: Alsike and Dutch clovers are in excellent condition and should be just right to produce a good flow of fine clover honey during the latter part of June and July. The upland or winter cress is now producing a surplus and locust is just beginning to open.

Miscellaneous: A word might be said about wintering since this subject is still fresh in our minds. Records taken over the entire state present an interesting picture. Colonies properly packed with three or four inches of good dry material came through in fairly good condition. In a few scattered yards losses were heavy where the colonies were packed. These exceptional losses were due to an exposed location or starvation. Colonies with a top entrance came through in good shape. They were not as strong as the packed colonies but losses were relatively small, where the bees had both a top and a bottom entrance. Colonies without packing and without a top entrance died in large numbers.

The location of the apiary was also a very important factor in regard to winter losses.

Large numbers of package bees have been installed to replace losses. About a ton were used in two of our important fruit counties. The package bees have built up rapidly when fed sufficient quantities of sugar. It looks now as though they will produce a larger average crop than will wintered colonies. Considerable trouble has been encountered with queens in wintered colonies and in package bees. In fact, I have seen more drone laying queens and workers this spring than for the past three years combined. A number of packages arrived with queens dead which was contrary to expectations.

In spite of the various troubles encountered by beekeepers this spring it looks now as though a good crop of fine flavored honey would be harvested.—Edwin J. Anderson, College Station, Pa.

ONTARIO, May 27.

By way of introduction, Dad is not in position to write this month so I am pinch-hitting for him. He had a rather serious operation on Thursday, May 23, and was in the Toronto General Hospital. We wish to inform all of his friends that he is getting along fine.

One of the Sons.

[We are sorry to learn of Mr. Byer's illness, and we all wish him a speedy recovery. We are thinking of you, Mr. Byer.—Editor.]

Weather: We have had a very backward spring here in this part of Ontario. Weather has been very cloudy and cool and now on May 27 the apple bloom is just beginning to show. We depend a great deal on the willow for nectar to pep up our colonies and to get a lot of our clipping done, but it has rained most of the time since their opening and now they are about gone. Sunday, May 19, we had a terrific storm and in only a few minutes the better part of an inch of rain fell. It was accompanied by a very strong wind which completely wrecked two of the largest barns in the district and snapped off a few hundred pine and spruce trees on one farm. Since them we have had rain nearly all the time with the result that water is standing in most fields all over the county.

Prospects: No doubt this heavy rainfall will be a big boost for our clover, and the alsike is becoming very rank in growth. Unfortunately we have very little of this clover this year but a very large acreage has been sown for next year.

Condition of Bees: As weather has been backward our bees have not built up as they should have but with good weather and plenty of dandelion and apple bloom they should come along now.

Miscellaneous: We have a splendid lot of mink kits this year, around 150, and this makes us a lot of added work as Dad looked after them almost entirely. However, we should get the bulk of our queen clipping finished this week if weather stays fine.

If conditions abroad continue it may be difficult marketing our product but we must hope for better times and make the bees do their part in helping to feed the many thousands who are perishing for want of food.—Walter G. Byer, Markham, Ontario.

Asked and Answered

Supering and Food Chamber

Question.—As a beginner I am somewhat confused as to the correct method of adding supers for extracted honey. In the lessons printed by Ohio State University they recommend always putting the empty super directly above the brood chamber while the A B C and X Y Z of Bee Culture recommends adding supers as they are needed. In this part of the state is it advisable to just leave the two brood chambers together or should the double (or extra brood chamber) be put on top of supers?—Ventry E. Wagnitz, Ohio.

Answer.—There seem to be differences of opinion as to the best method of supering. We like the top supering method, mainly because it saves a tremendous amount of labor. When supering by the old orthodox method, it is necessary to lift off the filled and partly filled supers in order to put a fresh super at the bottom of the pile, then to lift these filled and partly filled supers back on again. The secret of success in top supering is to provide an ample amount of supers in plenty of time, a little in advance of when the bees actually need supers. Many tons of honey are lost each season because beekeepers fail to super on time, or, to give the necessary amount of supers to contain the crop. We suggest that you keep the two brood chambers together throughout the season, or throughout the year for that matter, especially since you are in a section of the state where fall honey is secured and where the bees are likely to fill the food chamber, or upper brood chamber late in the season. If you find queen cells, it may be necessary to raise most of the brood into supers above the queen excluder, leaving one frame of brood with the queen, also empty combs below the queen excluder. This separates the brood from the queen and as a rule it prevents swarming. If, however, you provide plenty of comb space early in the season, swarming cells are not likely to occur, unless perhaps very bad swarming conditions prevail. Inasmuch as you wish to add some top brood-chambers to your single story colonies, it will be all right to give these supers at the present time. If, however, you have supers containing frames with full sheets of foundation to add, it may be preferable to wait until the honey flow is on, before adding these. If there is a honey flow on in your locality, put the supers on immediately.

Destroying Wax Moth

Question.—What can I do to destroy the wax moth?—George M. Sheehan, Ohio.

Answer.—In order to prevent all trouble from the wax moths in hives occupied by bees, it is only necessary to keep strong colonies in modern hives, and supplied with good Italian queens. All supers of combs stored in the honey-house should be piled and covered carefully, so that no moth may gain access. If, however, the combs contain eggs from the wax moth when taken from the hive, the wax worms will develop later on. If moths should appear in stored material, and yet the combs are not badly affected, they may be given to strong Italian colonies to clean up. If the condition is more serious, the combs will need to be fumigated. In this case, place at the top of the pile in an empty super, a pan containing carbon bisulphide and leave tightly covered until the next day. The fumes, when mixed with air, are highly inflammable, and the fumigation should therefore be done outdoors, away from buildings. At 70 degrees Fahrenheit, 10 cubic feet of space requires about two ounces of carbon bisulphide for complete saturation. This kills everything except the eggs. In about 12 days, when the eggs hatch, another fumigation will be necessary. In estimating the amount of bisulphide needed, it should be remembered that the empty combs occupy a part of the super space, and, if filled with honey, they probably take up as much as two-thirds of the space.

Does Crimson Clover Yield Nectar?

Question.—Can bees get honey from crimson clover?——O. D. McCafferty, Tennessee.

Answer. — Crimson clover will yield honey provided it is on good soil in territory considerably south of the Ohio River. It does not resist cold like other clovers, but like all clovers, it will require liming of the soil if it is at all acid, or slightly acid, as it is in many sections of Tennessee.

XUM

Talks to Beekeepers

Editor M. J. Deyell in the apiary.

When It Rains, It Pours

This is not a Morton's Salt advertisement, but rather, it describes weather conditions in this area. At this season of the year (this is June 17) we fill package bee orders from some of our apiaries near Medina. Last week it was necessary to shake bees from an apiary some distance from the main road, so we had to make a two-man carrier to transport bee shipping cages across a very wet pasture lot. The men had to wear rubber boots.

On June 15 I hauled some supers to my own apiary. As I checked through the colonies I noticed a cloud in the West, about the size of a man's hand. Presently the sun was overcast and a few minutes later we had an electrical storm with a downpour of rain that drenched me to the skin before I could get the last super in place. You can imagine how the bees, homeward bound, to beat the storm, covered the hive entrances. It was a sight to behold.

Keep Bees Better

Some years ago I carried the idea that in order to be a successful beekeeper one should operate a large number of colonies. At present I am of the opinion that one should operate the number of colonies one can manage intelligently and successfully. There is a vast difference between a hive with bees in it and a hive containing a real colony of bees with good combs and a good queen.

As I have visited apiaries near the close of a honey flow I have noticed a wide variation in the number of supers per colony. If all colonies put up as much surplus honey as the best colonies during a good honey season, what a whale of a crop would be harvested.

There surely is a reason for this variation in colonies and it must be due to a difference in the quality of queens, with other things being equal. Queens of inferior stock should be weeded out and be replaced with young, vigorous queens from a strain known to be superior in honey-gathering qualities.

The late Dr. Miller gave some sound advice to a young beekeeper, as follows: "For best success, get pure stock. Keep tab on every pound of honey taken from each colony, then breed from the best storers that are all right in color and temper."

Giving Good Queens a Chance to Make Good

It is one thing to have all colonies headed with good queens and still another matter to give each queen a chance to do her best work. Some queens may be called poor, when, as a matter of fact, the owners are to blame for not providing suitable conditions for the queens to do good work. Queens need good combs for brood-rearing and the colonies produced by these good queens need ample comb space for storing the crop. In view of what I said in the June Talk it seems unnecessary to elaborate further on these points. And yet, as these lines are written, it is safe to say that thousands of colonies throughout the country are suffering because of a lack of adequate comb space, which means supers.

Entrance Diagnosis

It is comparatively easy to pick out strong and weak colonies by watching the bees fly on good flight days. Furthermore, one can determine quite accurately during the honey flow whether or not colonies are crowded for room, by the appearance of entrances. If bees are bunched up at the entrance during the middle of the day when nectar is being gathered this is usually an

indication that more supers are needed.

Bricks for Hive Covers

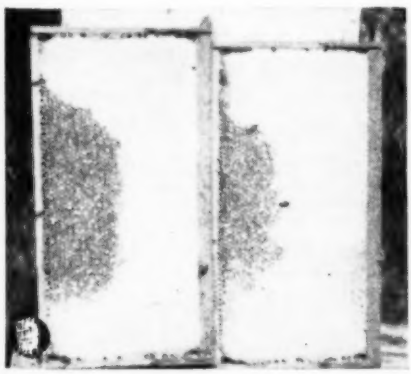
For a number of years we have been using a brick on each hive cover to prevent the wind from blowing off covers, also to mark colonies for future manipulations. For example, if a colony is normal the brick may be placed flatwise on the cover. If a super will be needed in the near future the brick may be placed edgewise. And thus one can tell by glancing down a row of hives, after checking through an apiary, which colonies are likely to need attention in the near future.

Ventilation

Some beekeepers practice giving colonies ventilation in hot weather while others do not provide ventilation other than a wide summer entrance. For a number of years we have been leaving about a ½-inch opening at the back of each brood chamber directly under the queen excluder, by pushing the pile of supers and excluder forward ½-inch. This gives the bees a chance to cool off the brood chambers and we think it is a swarm control measure. We do not stagger supers.

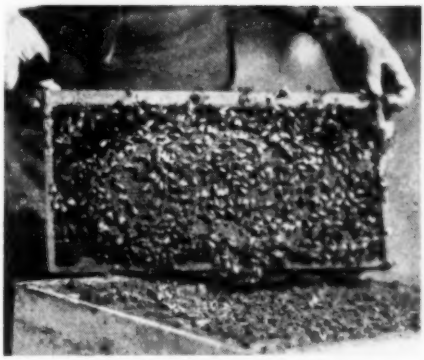
Don't Take Honey Off too Soon

Most beekeepers are anxious to taste the new crop of honey. The tendency is to remove combs or supers before the honey is properly



Extracting combs of honey ready to be put into the extractor.

ripened. Honey taken off too soon is likely to ferment. Extracting combs should not be removed until they are at least three-quarters capped over and even then, during rainy weather, the honey may not be thoroughly cured. Comb honey should



A good example of how a brood comb should look at the height of the season.

not be taken off until sections are entirely capped.

How to Remove Surplus Honey

Beekeepers with only a few colonies may remove extracting combs by brushing the bees off with a bee brush. A more convenient method is to use a bee escape, a contrivance that fits into the hole in the inner cover when the wooden block is removed. The inner cover with escape is placed under the super of honey. The bees go down through the escape, passing between a set of pliable springs which prevent them from returning into the super. In one or two days the super above the escape board may be removed without disturbing the bees.

Equipment for Extracting

A small two or three frame honey extractor is large enough for the beekeeper with from one to twenty colonies.

The room in which the extracting is done should have windows screened to keep out bees. The extractor should be anchored down securely to prevent its rocking while in motion.

Combs of approximately the same weight should be selected so that the machine may not be thrown out of balance. After combs are uncapped with a hot knife they are placed in the baskets of the extractor. A part of the honey should be thrown out of one side of the combs, which requires only a few revolutions, then the combs are reversed and all of the honey is thrown out of the opposite side. The combs should be reversed again and all of the honey thrown out of the first side.

(Continued on page 465)

XUM

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CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 10th of month preceding.

HONEY FOR SALE

NEW CROP clover extracted honey. H. E. Crowther, Cass City, Mich.

FINE clover honey, case or car. Leslie A. Davis, R. R. 2, Union City, Ind.

FANCY clover honey, case or quantity. E. J. Stahlman, Grover Hill, Ohio.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY—Light and light amber extracted. F. W. Lesser, Fayetteville, N. Y.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

CHOICE clover honey in 60's. R. C. Bish, successor to Moore Apiaries, Tiffin, Ohio.

NEW CROP holly blossom honey packed in sixties. Harry Spooner, Stephens, Ark.

GOOD CLOVER extracted in sixties, 6c; light amber, 5½c. H. G. Quirin, Bellevue, Ohio.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

ORANGE, palmetto and mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

CHOICE clover honey, new cans. Case, $7.20. Sample, 10c. Martin's Apiaries, Oswosso, Mich.

NEW CROP white clover comb and extracted ready to ship July 15. F. J. Smith, Castalia, Ohio.

HONEY in new 60's. Alexander Company, Reynolds Road south of Dorr Street, Route 4, Toledo, Ohio.

CLOVER CUT COMB. Pure clover extracted honey in 5's or 60's. George Eykamp, Cuyahoga Falls, Ohio.

MICHIGAN White Extracted in 60's. Strictly high grade in new cans. M. H. Hunt & Son, Lansing, Mich.

FANCY NEW CROP sweet clover honey for immediate shipment 5¼c lb. Irvin Klaassen, Whitewater, Kansas.

HONEY FOR SALE—All kinds, any quantity. H & S Honey & Wax Co., Inc., 265-267 Greenwich St., New York, N. Y.

FANCY white clover extracted honey, can or carload. Price on request. Sample 15c. Jos. H. Hoehn & Sons, Ottoville, Ohio.

LET US show you how you can save on your honey purchases. We also buy honey. H. Blitz, P. O. Box 3452, Philadelphia, Pa.

COMPLETE line comb and bottled honey, pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

SELECT LOTS white sweet clover, also processed white honey in 60-pound tins. A. I. Root Co., 224 West Huron Street, Chicago, Ill.

FANCY white tupelo. Best grade produced in several years; also light amber. Prices on request. R. R. Davis, Wewahitchka, Fla.

CHOICE white sweet clover, also extra light amber honey in new 60-pound tins by the case or carload. Dadant & Sons, Hamilton, Illinois.

NEW FANCY TUPELO in 10-lb. pails, $1 25 F. O. B. Apalachicola. 3 tons light amber. What offer? Stevenson's Apiary, Apalachicola, Florida.

EXTRACTED HONEY—White clover, 6½c; light amber, 6c; amber, 5½c; buckwheat, 5c; granulated comb honey, cheap. C. B. Howard, Geneva, N. Y.

HONEY PACKERS—Write us for prices on carload lots of California and western honeys. We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, California.

WHITE sweet clover extracted in new sixties. One can or a carload. Extra good quality and the price is reasonable. Sample 20c to apply on order. Harry C. Kirk, Armstrong, Iowa.

RASPBERRY HONEY blended with clover honey in 60-lb. cans for $4.00 a can; 10-lb. cans postpaid for $2.00 a can. Sample by mail, 20 cents. Elmer Hutchinson & Son, Lake City, Mich.

NEW 1940 CROP of Michigan clover honey should be ready for the market this month, July. Write us your requirements. Since 1876. E. D. TOWNSEND & SONS, Northstar, Michigan.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tailman St., Syracuse, N. Y.

NEW clover comb, very nice, 12 to 16 oz., mostly 15 oz., very white, well capped. $3.10 case in shipping cases. Guaranteed to arrive in good condition by freight. Clarence Engle, Kearneysville, W. Va.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O. D. terms except when the buyer has thoroughly established his credit with the seller.

WANTED—White and light amber extracted honey. George Eykamp, Cuyahoga Falls, Ohio.

WANTED—White clover honey. New cans only. Clover Blossom Honey Co., 712 Kossuth St., Columbus, O.

WANTED—Carlots honey; state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

HIGHEST cash returns made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Ky.

CASH PAID FOR carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wis.

WANTED—White and amber extracted Honey, any quantity, also Beeswax. Write The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Apiaries, 12243 12th St., Detroit, Michigan.

FOR SALE

SENIOR Brand capping melter, used one season. Robert Peach, Lynn, Ind.

QUEENBEE PAINTING outfits, $1.00 postpaid. Southwick Apiaries, Waban, Massachusetts.

90 CASES, 60-lb. cans, 2 cans to case, 30c case for lot; 10 or more, 35c case. Dr. Hayman, Doylestown, Pa.

USED watchmaker's desk, tools, supplies, and $85.50 Horology course for sale. Andrew Kinsinger, Meyersdale, Pa.

CUT COMB HONEY—Cartons and equipment. Get our prices on everything for cut comb honey. James Hilbert, Traverse City, Michigan.

FOR SALE—One Junior size Brand capping melter, used only last season, good as new, $23.00 F.O.B. Boyd. George Barr, Boyd, Wis.

ATTRACTIVE prices on bee supplies and comb-foundation. Send for catalog. Saves you money. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

COMB FOUNDATION at money-saving prices. Plain, wired and thin section. Wax worked at lowest rates. Comb and cappings rendered. E. S. Robinson, Mayville, N. Y.

ELECTRICAL honey uncapping knife complete with transformer, 110-120 volt, secondary, 1½ volt. Price $12.00. Lifetime guarantee. Paul Krebs, 8000 Fulton Ave., Detroit, Mich.

YOUR WAX worked into high quality medium brood foundation, 15c pound; 100 pounds, $10.00. Thin super, 22c; 100 pounds, $18.00. Medium brood, 10 lbs., $4.50. Fred Peterson, Alden, Iowa.

CARTONS for cut Comb Honey. New attractive designs with your name and address. Low prices. Fast service. Samples on request. May Carton Co., Box 257, Traverse City, Michigan.

FOR SALE—Fine quality queen mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

PINARD nailless queen cage. Agents: Diamond Match Company, Los Angeles and Chico, California; Weaver Apiaries, Navasota, Texas. Samples. A. B. Pinard, 810 Auzerais Avenue, San Jose, California.

Mountain Gray Caucasian Queens

50c EACH

17 years ago we couldn't buy this quality Caucasians at any price (in this country). Send your orders to us. We are running three large mating yards.

Service and bees guaranteed.

BOLLING BEE CO., Bolling, Ala.

QUICK SERVICE

Dependable Selected

ITALIAN

Queens

THE PUETT COMPANY

Hahira, Ga.

Queens by return mail 25c

2-lb. Package with Queen, $1.25

3-lb. pkg. with queen $1.60

Packages express collect.

No "Ifs" nor "ands" when you order NORMAN BROS'. queens and bees. You get highest quality, quick service, full weight, health certificate, young queen absolutely guaranteed in every respect.

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A Good Rule to Go By

Buy your Italian bees and queens from

ALABAMA APIARIES

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2-lb. package with queen $2.00
3-lb. package with queen 2.50
Queens, ... .65

MERRILL BEE COMPANY
Italian Bees Queens

	Quantity	
With queens—1 to 50		50 to 5000
2-lb. pkgs.	$2.00	$1.75
3-lb. pkgs.	2.50	2.25

Untested queens, 50c each.

"Mississippi's Oldest Shippers"
Queen breeders for 30 years

Bucatunna, Miss.

Tennessee Quality Queens

Hardy three-banded Italians, grown direct from eggs just as Nature intended. These queens are large, very prolific, and great honey producers.
Will send you choice select queens that you will be proud to have head your colonies. A trial order is invited just to show you that there is a difference.
Price, 50 cents per queen, any number.

L. E. Smith

Hollow Rock, Tennessee

"She-suits-me" queens, 3-banded Italians, most excellent strain: One queen, 75c, 3 queens, $2.00. Stamps accepted for single queen.
Koolairy veil, $1.50 postpaid, SAFIN queen cage, $1, for ten; 15c for one.

ALLEN LATHAM
Norwichtown, Conn.

For Sale---Pure Italian Bees

and queens. Nothing but the best.
Queens, 35 cents each.
Pound of bees at a new low price.
You send for them, they go.

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Italians of Quality

50c; 12 or more 40c.

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SAVE MONEY by letting us work your wax into wired or regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices, as we have no agents. Walter Kelley Co., Paducah, Kentucky.

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CIDER TIME, Free, How to keep cider sweet, make vinegar quickly, money from cull apples. Presses, Graters, Supplies. Honey and sweet cider make an excellent roadside combination. PALMER BROS., COS COB, CONN.

A REAL live business for sale. Fruit and honey, with assured market for all you produce. This is not a ten-cent affair and will stand the strictest inquiries. Reasons for selling quite personal. Further details given to those who mean business. P. F. Oliver, Lansing P. O., Ontario, Canada.

BEES AND QUEENS FOR SALE

ITALIAN QUEENS. W. G. Lauver, Middletown, Pa.

ITALIAN QUEENS, untested, 50c. White Pine Bee Farms, Rockton, Pa.

CAUCASIAN queens, 50c each. P. B. Skinner Bee Co., Greenville, Ala.

ITALIAN queens, three-banded, after June 1st, 50c each. Robert B. Spicer, Wharton, N. J.

NORTHERN-BRED queens, bright, hardy Italians, 50 cents each. Shirl Baker, Rodney, Michigan.

ITALIAN THREE-BAND QUEENS, 35c each, three for $1.00. D. W. HOWELL, Shellman, Georgia.

FOR SALE—Empire State strain Italians. Bred for honey production, 50c each. Coggshall & Son, Groton, N. Y.

ITALIAN queens. N. J. Experiment Station stock, selected, carefully reared, 75c each. Circular. E. G. Carr, Pennington, N. J.

12 10-FRAME bees, $50; 25 5-frame bees, $75. Guaranteed no disease. New Root bodies. J. Lowe, R. 3, New Brunswick, N. J.

FOR SALE—Queens. Fancy Goldens, 60 cents. Famous leather backs and Caucasians, 50 cents. Write for quantity prices. Guilford Apiaries, Guilford College, N. C.

QUEENS with character. The best that can be produced. Shipped when you want them. At a price you can afford to pay. 20 years' experience. D. P. Green, DeLand, Fla.

REAL PETS—Brown's Stingless Bees. Good honey gatherers, non-swarmers. Season's price, $1.00 for a queen, over 10, 90c each. Brown's Apiary, Cape May Court House, N. J.

GOLDEN QUEENS, excellent quality. Hardy, gentle, productive, health certificate. Satisfaction guaranteed. Untested. 50c, tested. $1.00. O. E. Brown, Route 1. Asheboro, North Carolina.

QUALITY 3-band "Honey Girl" Italian Queens. Line bred for honey gathering, gentleness, prolificness and beauty. 35c EACH. 2-lb. pkg. with young laying queen $1.50; 3-lb. pkg. with young laying queen $2.00. Satisfaction guaranteed. A. D. St. Romain Apiaries, Diamond, Louisiana.

THREE-BANDED Italian queens of fine quality, 50c each, any number. L. H. Wagoner, Elon College, N. C.

CAUCASIAN package bees. Queens for June: 2-lb. package, $1.75, 3-lb. package, $2.25. Untested Queens, 50 cents each. Safe arrival guaranteed. Lewis & Tillery Bee Co., R. 4, Box 132, Greenville, Ala.

CHOICE BRIGHT Italian queens that are a pleasure to work with. The stock has been bred and selected in the North the past 36 years. For good winterers, hustlers, and gentleness. Price 75c each and $8.00 a doz. Emil W. Gutekunst, Colden, N. Y.

EXTRA YELLOW Italian queens, that produce bees a little more yellow than three-banded; more gentle and just as good workers. Untested 50c each; tested $1.00 each. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, N. C., Route 2.

NORTHERN BRED Leather-colored queens, 35c, 3 for $1.00. We cooperate with honey producers in selection of our breeding queens and believe our stock to be as good as the very best. For prompt service and good queens send your orders to Diemer Bee Co., Liberty, Mo.

FOR STRONGER COLONIES, bigger honey crops, and gentler bees, try our prolific well-bred 3-banded Italian queens used for years by leading beekeepers of the U. S. and Canada. Select young laying queens, 50 cents each; ten, 45 cents each; twenty or more, 40 cents each. Prompt deliveries, no disease. We have one of the largest best equipped queen rearing places in the South. H. C. Short, Fitzpatrick, Ala.

STOP, LOOK, LISTEN.—Stop wasting money on inferior packages. Look at the results others are getting from Cutts' packages. Listen to reason. Only good quality packages pay profits. Poor packages are expensive at any price. 1-25—2-lb. with queen, $2.10; 3-lb. with queen, $2.75; Untested queens, 50c. 25-100—2-lb. with queen, $1.95; 3-lb. with queen, $2.60; Untested queens, 45c. 100-up—2-lb. with queen, $1.85; 3-lb. with queen, $2.45; Untested queens, 40c. J. M. Cutts & Sons, Rt. 1, Montgomery, Ala.

MAGAZINES

DAIRY GOAT JOURNAL, Dept. 419, Fairbury, Nebr. (big monthly magazine, 3 years $1), gives complete information. Introductory 5 months, 10c.

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly 7c6d. Apply Editor, Indian Bee Journal. Jeolikote, Dist. Nainital, U. P. India.

MICHIGAN BEEKEEPER. The State Bee Magazine with a National Circulation. 75c a year, 2 years $1. Send 10c for single copy. MICHIGAN BEEKEEPER, R.F.D. 3, Lansing, Mich.

MANY beekeepers have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy Canada's oldest fur farming magazine telling how. Fur Trade Journal of Canada, Box 31, Toronto 2, Ontario.

THE BEE WORLD—The leading journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free, 12 cents stamps. Membership in the Club, including subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

We thank our many customers for a nice business and for patience when we were sometimes unavoidably late. Owing to bad weather it has been a hectic season.

We still offer package bees at summer prices and queens at 50c down to 35c depending on quantity.

Our best friends are satisfied customers.

MORLEY PETTIT, Tifton, Georgia

ITALIAN QUEENS

Shipped same day order is received.
1, 50c; 6, 45c; 12 or more, 40c

CITRONELLE BEE CO.
Citronelle, Alabama

Mott's Northern Bred Italians

Thanks to the many advising the less winter loss, by using the Northern queens, $1 00; 2 or more, 75c each; 25, $17.50. Tested, $2.00, $3.00, $5.00. Fair to good breeders. Virgins, 3 for $1.00. All queens guaranteed pure mated, or will replace.

E. E. MOTT,
Glenwood, Mich. U. S. A.

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5-lb., 2½-lb., 20-oz. Pails
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5 and 10 lb. Friction Pails
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SPOERRI'S GOLDENS
Personally reared powerful fertile GOLDEN QUEENS improved and bred UP from Italian stock. Remarkably beautiful bees, gentle, large, and CHAMPION HONEY PRODUCERS. 60c each, postpaid.
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SPOERRI APIARIES
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THAGARD'S
MASTER BRED IMPORTED ITALIANS
Are bred from the very best stock obtainable from Italy. They are bred for hard cold winters.
Due to the fact that all the bees in our queen yard are of imported stock you are assured of as pure Italians as if they had come from Italy.
ACT TODAY—Here is your opportunity to purchase QUALITY bees and queens at PANIC PRICES

2-lb. pk. with queen,	$1.25,	$1.19,	$1.15
3-lb. pk. with queen,	1.65,	1.59,	1.55
Untested queens	.35,	.30,	.29

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Established 1918
THE V. R. THAGARD CO.
Greenville, Ala.

QUEENS
BY THE THOUSANDS
as low as 25c each
We are at this season of the year turning most of our time and business to the production of FINER queens at LOW cost. We are in position to make prompt shipment of any size order even on short notice.
Remember we have thousands of queens ready for shipment. So send your orders in.
SENSATIONALLY LOW PRICES

2-lb. pk. with queen,	$1.25,	$1.19,	$1.15
3-lb. pk. with queen,	1.65,	1.59,	1.55
Untested queens,	.35,	.29,	.25

For prompt service, send your orders to
GREENVILLE BEE CO.
Greenville, Ala.

QUEENS
Italian or Caucasian
One to 25—50 cents each
26 to 49—45 cents each
50 and up—40 cents each
Weaver Apiaries, Navasota, Texas

Look---Three-Banded Italian Bees and Queens
They are real honey-getting bees. They are gentle and easy to work with. A trial order will convince you. Satisfaction guaranteed. Write for prices.
ALAMANCE BEE COMPANY
Geo. Elmo Curtis, Mgr. Graham, N. C.

Package Bees and Queens
Bright Three-banded Italians. Well improved stock. If you want the very best in bees that money can buy. A trial order will convince you that our loose queen package, prompt and safe delivery, is just what you have wished for.
2-lb. pkg. with queen, $1.75; 3-lb. pkg. with queen, $2.25; Queens, 50c each.
TAYLOR APIARIES, LUVERNE, ALA.

→ Hello, Folks ←
STEVENSON'S LINE-BRED GOLDENS ARE THE BEES AND QUEENS YOU NEED. We are wonderful!
Write to STEVENSON'S APIARIES, WESTWEGO, LA., for circular.
2-lb. pkg. with queen, $1.90; 3-lb., $2.50. Queens, 50c; tested $1.25.
Discount on 10 or over.

2-lb. Package Italian Bees with Queen
now only $1.20; 3-lb. package, $1.55; F.O.B. Express. Untested queens, 30c or 4 for $1.00. Safe arrival and satisfaction guaranteed.
NORMAN BEE CO., LaPine, Ala.

Attention Producers!
throughout U. S. and possessions. Would you like to receive a bonus for your extracted and comb honey?
Write for particulars.
H. BLITZ, P. O. Box 3452, Phila,, Pa.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

CARNIOLAN QUEENS
Requeen with Carniolans and save on winter stores. Carniolans build up rapidly in the spring and are the most excellent workers. Jan Strgar Strain.
Untested Queens, 50c each; Ten or more, 45c each, postpaid.
For air mail, add 5c per queen.
EPHARDT'S HONEY FARMS, TORRAS, LOUISIANA.

Honey Jars
by Foster-Forbes
AVAILABLE IN THE FOLLOWING SIZES
NO 756 - 5 OZ HONEY - 43 #/M
NO 757 - 6 OZ HONEY - 43 #/M
NO 755 - 8 OZ HONEY - 48 #/M
NO 758 - 16 OZ HONEY - 58 #/M
NO 759 - 32 OZ HONEY - 70 #/M
NO 759 - 32 OZ HONEY - "G"
AND TALL CYLINDER HONEY JARS
write us for free samples
AND THE ADDRESS OF THE BEE SUPPLY DEALER MOST CONVENIENT TO YOU
Foster-Forbes GLASS CO. MARION, IND.

OLD COMBS AND CAPPINGS
rendered
Lowest Rendering Charges
2c per lb. on 100-lb. shipments.
3c per lb. less than 100 lbs.
Best Market Price Paid For Beeswax
THE FRED W. MUTH CO.
229 Walnut St. Cincinnati, O.

HONEY WANTED
We will buy your crop of white or amber extracted honey at best market price. Send sample, write us.
THE FRED W. MUTH CO.
229 Walnut Street Cincinnati, O.

PERFECT COMBS on Schmidt's Economy Foundation
Try it and see for yourself.
Send for our price list.
Oscar H. Schmidt and Sons
Makers of Schmidt's Economy Foundation
Rt. 4, Bay City, Mich.

Queens Queens
"Better Bred Italians"
Requeen with our carefully reared select Three-banded Italians. Safe arrival and satisfaction guaranteed. Order now—any number. 30c each.
THE IDEAL APIARIES Wiggins, Miss.

BEEKEEPERS ITEM
Serving the beekeeping industry for a quarter century without bias or prejudice. "The forum for the thoughtful." One year, $1.00; two years, $1.50; sample copy, 3c stamp.
With Gleanings it provides a combination that covers the beekeeping field.
Both magazines for one year, $1.75.
BEEKEEPERS ITEM
P. O. Box 687 San Antonio, Tex.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

York's Package Bees and Queens

Quality Bred Italians More for Your Money

Queens, 50 cents each; ten up, 40 cents each. Two-pound packages with queens, $1.60 each; ten up, $1.50 each; three-pound packages with queens, $2.10 each; ten up, $2.00 each. Prompt shipment.

Book orders now for shipping dates wanted. Full weights, safe arrival and satisfaction guaranteed.

York Bee Company
Jesup, Georgia, U. S. A.
(The Universal Apiaries)

JUST NEWS

(Continued on page 440)

show, cooking contest, guessing contests, etc. Basket dinner, entertainment, followed by out-of-state and local speakers.—H. H. Sigler.

• • •

The Empire State Beekeepers' Association will have a basket picnic at Adams & Myers, Ransonville, N. Y. on August 17.

• • •

Cuyahoga County (Ohio) beekeepers will hold their annual summer round-up on Sunday, July 28, at the home and apiary of the County Bee Inspector, George Seidel, Depot Rd., Strongsville, Ohio. The activities will begin with a basket picnic at 12 o'clock (rain or shine), followed at 2:00 p. m. by talks by well-known leaders in the bee industry. All beekeepers, whether members of the Association or not, and bekeepers from neighboring counties are cordially invited to spend an enjoyable afternoon with us.—J. M. Miller, Sec.

• • •

Mr. E. H. Pratt, a prominent commercial beekeeper of New York State, passed away April 11, at Munnsville, at the age of 60 years.

Bees and Queens

(Northern Produced)

Our fine stock is ready for immediate shipment. Get your order in now. Your bees will arrive in excellent condition due to the short distance they have to travel.

Write for Prices on Quantities

Root QUALITY BEE SUPPLIES

The A. I. Root Co.
Medina, Ohio

Root QUALITY BEE SUPPLIES

TALKS TO BEEKEEPERS

(Continued from page 457)

How to Strain the Honey

The commercial beekeeper with a large extractor will use a honey pump for pumping the honey from the extractor to the tank. The small beekeeper with a hand machine may run the honey from the extractor into a pail, then empty the pail of honey into a small honey tank covered with two thicknesses of fine cheesecloth for straining the honey. The cheesecloth may be fastened over the top of the tank by means of a wire tightened with pliers, or a support for holding the strainer cloth may be used.

During hot weather honey direct from the extractor will strain through two thicknesses of cheesecloth quite readily. If the weather is cool it may be necessary to heat the honey before straining. To do this, the honey should be run into 60-lb. cans from the extractor, then heated in a wash boiler with water surrounding the cans, which should rest on small wooden sticks so water may circulate under the bottoms of the cans.

Shaw's Three-Band

ITALIAN QUEENS

Are reared nature's way where queen rearing has reached the peak often sought after but rarely attained.

Every one as good as the best.
Price, 40 cents each.

Package bees:
2-lb. with queen, ... $1.60
3-lb. with queen, ... 2.20

Queenless packages, deduct price of queen.

A. E. Shaw
Shannon, Miss.

DO YOU KNOW?

(1) That the **American Honey Institute** is the only national organization working continuously for the interest of beekeepers?

(2) That the **Institute** is keeping in constant touch with food organizations over the country encouraging them to handle honey?

(3) That the **Institute** is developing more consumer interest in honey, which is the foundation of our industry.

(4) That the **Institute** depends solely on contributions from beekeepers and the allied industries for support?

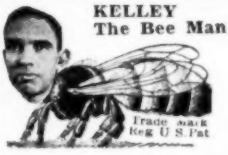
(5) That an increased budget for the Institute will mean a wider publicity for honey?

Help yourself by helping the Institute

Mail checks to

American Honey Institute

Commercial State Bank Building, Madison, Wis.



QUEENS

3 for $1.00 postpaid

35c each

Queens mailed daily from Paducah—3-banded Italians only.

The Walter T. Kelley Co., Paducah, Ky.

BETTER-BRED QUEENS THREE-BANDED ITALIANS

3 for $1.00

Head all of your colonies with our Better Bred Stock. They have proven their good qualities throughout the U. S. A. and Canada. Use them for increase, requeening and swarm control.

CALVERT APIARIES, CALVERT, ALABAMA

Garon's Three-Banded Queens

Use our quality-bred progeny test queens for best results.

Our prices place Record-Breaking Quality within reach of all.

Prices: 1 to 99 @ 35c each; 100 or more @ 30c each.

GARON BEE COMPANY **Donaldsonville, La., U. S. A.**

Quality Three-Banded Italian Queens

Quick Service. Satisfaction guaranteed.
30 cents each.

HOMAN BROS. **Shannon, Miss.**

DON'T BE MISLED

Quality, Service and profitable returns cannot be had from packages at unreasonably low prices.

IMPORTED ITALIAN BEES

produce more surplus and require less honey for wintering than other strains. Give us a chance to prove our claims by purchasing your supply of

PACKAGE BEES FROM

ROSSMAN & LONG, Box 133, Moultrie, Ga.

—PRICES—

2-lb. packages, $1.70; 3-lb. packages, $2.25. Loose queen packages, add 15c each. Nuclei with one frame brood, add 30c each. Queens, 50c each.
Above prices to be in U. S. Money or its equivalent.

We discontinued all shipping June 10th and will use the remainder of the season for making preparations for our 1941 business.

CAUCASIAN APIARIES
Brooklyn, Ala.

July Queens August

When you buy queens, you want good queens.

Three-banded Italians, the kind that build up quickly.

40c each, three for $1.00; or
30c each, lots of 100.

The Crowville Apiaries

Rt. 1. Winnsboro, Louisiana

PHOENIX, ARIZ.
Quick Seed & Feed Co.
Western Seed, Feed & Honey Co.

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F. E. Boyden-Hansen Co. Ltd.

ALHAMBRA, CALIF.
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Superior Honey Co.

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DURANGO, COLO.
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Roselawn Apiaries

MONTROSE, COLO.
Western Colorado Honey Exchange

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DECATUR, IND.
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M. H. Hunt & Son

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FOREST LAKE, MINN.
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WINONA, MINN.
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HIGGINSVILLE, MO.
Leahy Mfg. Co.

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SYRACUSE, N. Y.
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SPRINGFIELD, OHIO
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Lewis M. White

SALT LAKE CITY, UTAH
Miller Honey Co.

LYNCHBURG, VA.
G. B. Lewis Co.

NORFOLK, VA.
A. I. Root Co.

WATERTOWN, WISC.
G. B. Lewis Co.

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A. D. Hardy

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4622 West North Avenue, Chicago, Ill.

WHEELING • JERSEY CITY • LOS ANGELES • ST. LOUIS • CINCINNATI

NEW ZEALAND

J. R. Barber

SENDS A

"Lifetime" Message

"Lifetime" Extractor wins approval 8000 miles from home

"Three Oaks Apiary",
Richardson Road, Mt. Roskill,
Auckland, S. 3.,
New Zealand

Superior Honey Company,
Ogden, Utah
U. S. A.
Gentlemen:

"The Lifetime Extractor which I purchased from you three years ago has been something of a Godsend to me. Faced with the problem of purchasing a Machine which would extract honey without damage to combs in a locality in which much of the crop is very thick and heavy in body, I chose your Machine because the illustrations in magazines I saw gave me the impression that yours would be the ideal machine.

"I am pleased to be able to say that the Extractor has performed exceedingly well and hardly ever damages a comb. Any beekeeper whose crop is inclined to be heavy in body or who extracts his honey cold could not do better than to install one of your Machines, and I am confident that they can hold their own with any make of machine under any conditions.

"A large beekeeper who purchased one of your Machines told me that he would give me a testimonial 'a yard long', and I enclose an order for a further machine required by a neighboring beekeeper."

Yours sincerely,
Signed: J. R. Barber

Licensed manufacturers of Brand Capping Melters west of the Mississippi. Manufacturers of Superior WIRED Foundation.

Superior Honey Company

Ogden, Utah Idaho Falls, Idaho Los Angeles, California Denver, Colorado

LABELS

NEW 1940 DESIGNS
For Honey Jars

Send for Samples.

The A. I. Root Co., Medina, Ohio Root QUALITY

BLACK HIVES

(Continued from page 435)

heat. His white coat keeps him warmer at night than a black one would. I know that most people believe that the white animal is white because he lives on a white surface, but this is probably not the actual truth. I will not say that there is no truth in this theory, for in some cases it may be true. I firmly believe, however, that in most cases fur-bearing animals in the polar regions are white because white is a poor radiator.

I sometimes think that travellers in the tropics might profit from this fact. They wear white clothing inside and out. This serves to keep the outside heat out but does not carry off the excess of body heat. If they would wear skin-tight black underclothing with a loose-fitting white suit outside, then they would probably endure the tropical heat much better, for the skin-tight black clothing would radiate the body heat and the outer clothing would reflect the outside heat. If I ever go to the tropics I shall try out this scheme.

To close,—let me make it plain. You must not paint your hives black if they are single-walled, but if they are double-walled it will be perfectly safe.

Moore's Strain

LEATHER COLORED ITALIAN QUEENS— SUPERIOR STOCK

50c each

World-wide reputation for honey-gathering, hardiness, gentleness, etc., since 1879. Safe arrival and satisfaction guaranteed.

J. P. Moore

R. 3, Falmouth, Ky.
Former address, Morgan, Ky.

QUEENS

Carefully produced from Select Three-banded Italian Stock

35c each, any number.

Safe arrival and complete satisfaction guaranteed.

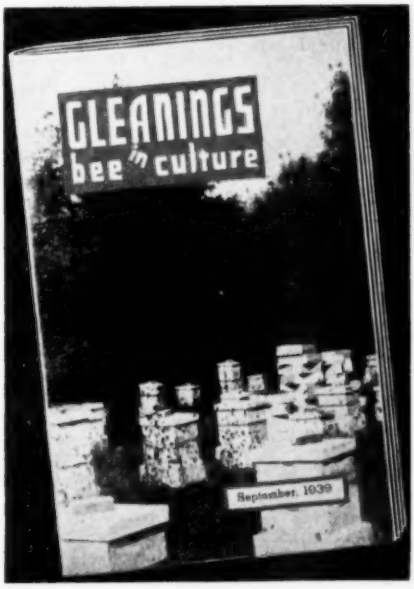
JOHN C. HOGG,
TIFTON, GEORGIA
P. O. Box 343

Solicit Subscriptions

Among Your Beekeeping Friends

A number of persons have wrtten us for our offer to reliable persons. However, we still have a few localities where the right person can secure a number of subscriptions. Write for sample copies. Give references.

Circulation Manager
Gleanings in Bee Culture
Medina, Ohio



XUM

←Morrison's Northern→

Three-banded or Leather-Colored Italians. Our foundation stock comes direct

→ From Northern Italy ←

———QUEENS———

Untested.....50c. Tested.....$1.00. Breeders.....$5.00

The Cloverdale Apiaries, Cloverdale, Ohio

QUEENS 25c

Bright 3-Band Italian Queens
By Return Mail

NORMAN'S BEES are guaranteed to please.
2-lb. pkg. with Queen, ...$1.25
3-lb. pkg. with Queen 1.60
Take advantage of these prices above and requeen those weak and failing colonies with queens of highest quality that are guaranteed to build them up and be of complete satisfaction to you. All packages F.O.B. express.
State Health Certificate Furnished.

JOHN A. NORMAN
Rt. 2, Box 38 LA PINE, ALA.

"How Cheap"

can queens be reared?

The answer depends on the standard set by the producer. Good queens cannot be reared by sub-standard methods. Beware of seasonal let-downs experienced by many business's. There is a tendency to let nature take its course, where there is little or no thought of a standard to maintain.
Where reputation is valued, one keeps everything "pepped" up. A few cents can make a whale of a difference.

SURPRISE PACKAGE
Limited time only, send coupon below. You will be delighted.
Queens: 1-10, 45c.
11-25, 40c. 26-100, 35c.
No discounts.

Jensen's Apiaries
Macon, Miss.

Cut or tear here
Coupon
Gentlemen: Please send me one of your surprise packages, for which find enclosed 10c to cover cost of packing and postage. Limit one to a customer.
Name .....
Address .....
Name and address of one beekeeper .....

THREE-BAND ITALIAN QUEENS

—Price—
Young laying queen, 35c each.

W. O. Gibbs
Phone 150. Willacoochee, Ga.

THRIFTY QUEENS

35c each; 100 for $30.00.
Thrifty bees are guaranteed to please. Forty-eight years' experience assures you of the finest stock.

W. J. FOREHAND & SONS
Fort Deposit, Ala.
Breeders since 1892.

CAUCASIANS

Extra gentle, prolific, long tongue, little inclined to swarm, dependable workers,—10% to 40% ahead of Italians. Foundation stock from mountainous region of Terek, Caucasus.

CARNIOLANS

Prolific at all times, very gentle, best of winterers, build beautifully white combs, most excellent workers. My Carniolans were used in the recent Iowa Experiment Station test showing Carniolans best for Northern and Western conditions. Have supplied many other Agricultural Colleges and Experiment Stations with them. 33d year with them. Ask for free paper telling more about both races.

Prices: Untested queens, 1 to 5, 60c each; 6 or more, 50c each. Tested, $1.00 each.

ALBERT G. HANN
Glen Gardner, New Jersey

THE NEW

BEEHIVE LINE

Now light in weight—with more label space. Available in ½ lb., 1 lb. and 2 lb.

HAZEL-ATLAS GLASS CO.

WHEELING, W. VA.

HONEY JARS

In designing jars especially for honey packers Hazel-Atlas stresses light weight crystal clear glass which displays the beauty of your product—and from a practical side, jars that are easily packed and labeled.

Write for Free Samples

MASTERLINE

Available in 5 oz. to 4 lb.

XUM

"YES"

Queens via Return Mail

No delays.
I ship when you want them.

Price List
Select Untested Queens,
50c each.

20 or more, 40c each.
Select Tested, $1.00 each.

All Queens Guaranteed
Purely Mated.

W. E. Harrell

HAYNEVILLE Alabama

Knight's Package Bees and Queens

Leather-Colored Italians The Best Honey Gatherers

2-lb. Packages including queen, ...$1.75
3-lb. Packages including queen, ... 2.25
4-lb. Packages including queen, ... 2.75
For queenless packages, deduct 50c.

Select young laying queens,
guaranteed mated pure, 50c.
No charge for clipping.
Immediate Shipments.

Jasper Knight

Hayneville, Ala.

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